THE GENESEE FARMER.

Agriculture is the most Healthy and Honorable, as it is the most Natural and Useful pursuit of Man.

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Farm Husbandry.

IMPROVED SYSTEM OF HUSBANDRY.

BY AGRICOLA.

When shall we see improvement among all our farmers? We do not despair of seeing it general, if not universal. We see it already in many towns throughout the State—and what is the result? In many of these towns already, an *advance* of from ten to twenty bushels per acre of the various crops raised. This is encouraging, and should induce every farmer to lend his aid. But perhaps some readers of the Farmer will say, "what do you mean by improvement?" We answer generally—first of all, know what is your soil; if grains are your main dependence, what grains are best adapted to it. See if draining is needed—and here let me say it is much oftener necessary than farmers who have not paid attention to the subject generally suppose. If needed, see that it is done with as little delay as practicable—and we will venture to assure you, your crop from this source alone shall be increased from one-quarter to one-half. If you doubt, try it carefully on a small piece of land, beside your land on which water stands more or less during the season, and if you do not realize at least one-quarter advance, we will admit that for once, land that needed draining has not been improved.

Select your manures judiciously and apply to the crops that need the variety you make. Would not this add much to your crops? Who does not know that often a wheat crop is ruined almost by an application of fresh manure directly to the crop, which if applied to a preceding corn or root crop would have been of great value, and would have been sufficient for a wheat crop to succeed. Keep your land thoroughly subdued and let not the weeds master the grain. It costs no more to raise grain than weeds—and which is the most profitable for the farmer? Improvement then can be had by carefully extirpating your weeds, and giving the grain an opportunity to obtain all the nutriment.

Be careful in the choice of your seed. No man ever succeeded well who neglected this. It is a small matter perhaps you think. Is it? Let us see. Good and perfect seed will usually vegetate and produce much larger returns than poor half formed seeds. It will not fail to prove true as a general rule that like will produce like, and what a man sows that shall he also reap.

Let your implements be of the best kind, and wherever labor-saving implements can be introduced to aid you, have them; all helps to cheapen the cost of production and increase the profit of the farmer. And don't forget to have every thing on your farm needed for work in its place when not in use, so that half the time of your men may not be taken up in running after the utensils, which have been left where last used, instead of being in their proper place. Would not this be improvement, if properly attended to?

Keep an account with your farm—yes, with every field—and let it be carefully charged with every expense and credited with its avails, so that you can at any time know what is your condition, whether advancing as you desire, or whether the result is a loss. Change your method, if the latter is the case from year to year, and soon you will find the crop and the system of management that will pay; at all events you will know where you are, and it will be your own fault if you do not bring your books to show the balance on the right side.

Is your land suited to fruit? Then let the best kinds for your locality, adapted to market, be selected. The trees will grow while you sleep. It will be but a little time before they produce, and soon your fine apples will yearly find their way to the sea-board—across the ocean, it may be; and the balance sheet will be all right, and you be in the enjoyment of the good fruits of improvement. Is not this well worth trying?

Is the dairy your business? How much cheese and butter do you make per cow? Those who attend to their dairies as they should, and select cows suited to them, are realizing from 500 to 600 pounds of cheese per cow, and from 200 to 300 pounds of butter. Have you reached this standard? If not, is it not worth your while to make the inquiry and ascertain what is the difficulty? Now is not that an improvement which secures the return above given?

And now let us look at this matter personally. Improvements are needed—can be made—and shall they not be made? What say the farmers?—what say the boys? An answer such as would be worthy of an American farmer would be—*I will try;* and if you *try* with all the lights which experience as well as science suggest, we venture the prediction, you will succeed—and then an answer will be found to the question which commences our article.

Editorial Correspondence of the Farmer.

WOOL-GROWING AND STOCK-RAISING IN THE MOUNTAINS.

The article which was published in the December number of this journal under the above heading has excited a good deal of inquiry, and induced the writing of not a few letters both to the office of the Farmer and the writer in Augusta, Georgia. The subject is one of national importance; and will be generally acknowledged as such, when maturely considered. From the Highlands on the Hudson to the Tenessee Bluffs, on the Mississippi, there extends a range of mountains, hills and elevated plains, whose agricultural capabilities are little known, and less appreciated by the great mass of American farmers. This remark applies with peculiar appositeness to the high dividing ridges, plains and valleys southwest of Pennsylvania, which divide the waters that flow into the Ohio on the north, from those that fall into the Atlantic and the Gulf of Mexico on the south. The tobacco, corn, cotton, rice and sugar planter from Maryland and Louisiana have had little occasion to work far up-stream and settle on the table lands, and in the gorges of the Alleghany and Cumberland Mountains. The emigration of planters has set steadily in a south-westerly direction, and spread itself over the the rich bottoms and diluvions of Alabama, Mississippi, Louisiana, Arkansas and Texas. A large portion of Virginia, and parts of North and South Carolina, Georgia, Alabama, Tennessee and Kentucky present the most inviting field for rural industry and enterprise to be found on the continent.

The writer has now spent two winters and one summer at the South; and has travelled over and studied the country with all the attention to its natural advantages and disadvantages, which he could command. So soon as one rises above the exclusive planting region on the Atlantic slope, he comes at once into a district where pure air and pure water with a mild and most agreeable climate, promise him good health and every physical enjoyment. As a general thing the soil is not rich, for if it was, the excessive growth of vegetation and its rotting on the surface of the ground would cause much sickness. If any one is so foolish as to desire a very rich soil, and is willing to pay the imminent hazard of his life, and jeopard the lives of his family to cultivate the same, it can be found anywhere along the coast from Chesapeake Bay to the Rio Grande. By going back into the highlands, you find a region perfectly healthy, where all useful grasses flourish in great luxuriance; where crystal springs and noisy brooks abound on every side; and where the husbandman can raise grapes and all other northern fruits, and at the same time escape at least two-thirds of the winter of Massachusetts and New York.

Wheat, rye, barley and oats *grow* in the coldest weather. Wheat sown in December here, is harvested in May; so are oats and barley. We have in our office a stalk of corn that has six good sized ears that grew upon it; and round turneps that weigh over 16 pounds each. That a high degree of solar light and heat is favorable to the rapid organization of all plants, when properly fed, either by nature or art, few readers have occasion now to learn. The skilful farmer can turn this increased power to organize grass, grain, roots and tubers, to a most profitable account. The northern man should have nothing to do with legitimate planting. Leave that to the worthy citizens who understand the business; but know nothing about wool-growing, making butter and cheese, nor any mixed agriculture. We are now paying two dollars a bushel for northern Irish potatoes. They are also brought from Tennessee. We have fine apples from Knoxville.

Northern hay sells here at $20 a ton, when it can be raised at one fourth of the money. One can buy fair farming land within forty or fifty miles of this city on the railroad toward Nashville at from $2 to $5 an acre. These lands have some buildings and fences upon them. They belong to planters who want to emigrate with their "force" to the richer virgin soils of Alabama, Mississippi, Louisiana, Texas and Arkansas. This tide of planting emigration, setting so constantly westward, creates a vacancy for a new race of legitimate farmers. The latter uniformly do well; for they get their land for a song; they have an excellent market at their doors, and purchase all their groceries, dry-goods and hardware as cheap as the farmers of Western N. York do.

Sweet potatoes and peaches are raised here by free white labor at a cost not to exceed six cents a bushel. Three crops of figs grow on the same tree in a season. Although Augusta is too far north to make a business of growing oranges, yet we never saw finer ones than grew in the open air in this city the past year.

The man that makes pork and beef in the Cherokee country for European consumption has about 2,000 miles freight advantage over the pork and beef at Cincinnati, which has to be sent 1500 to N. Orleans, and 1000 more round Cape Florida, before it reaches Savannah or Charleston. In 24 hours the Georgia farmer can have his on ship board in either seaport. Count up the difference in time, interest on capital, freight, insurance, danger of spoiling in the hot Gulf; and you will see the advantage of being near the sea-coast. Wool growing can be made profitable on the table lands of Tennessee: as it can be in this state. Tanning and currying leather, and getting out timber and boards in our pine forests, are truly profitable in the hands of men that understand the business. One that understood the trade of making plows and all agricultural implements, might realize a fortune in this city. It has a water power nearly equal to that at Rochester.

These things are named in answer to private letters. Manufacturing and mechanical pursuits are regarded with favor—all seek to encourage them. As a general rule money is made easily and spent freely. There is a large number of northern men here, and especially in mercantile business. Very few of them are planters. A few days ago a slave paid $2000 down for himself, wife and two children, in this city. There are scores that own good houses and lots, who are yet slaves. One in the city of Macon owns two slaves. On being asked why he did not buy himself, he said his master asked $1,700 for him; and he had purchased two men as good as himself for $1,300. All this class of negroes hire their time by the year; usually at about $75 or $80; and have all they can make by keeping horses and drays, snd doing job work, which often amounts to $1000 per annum. Every change made is for the better. Both races are working upward, and will, we hope, come out right at last.

Augusta, Ga., 1849.

HINTS TO DAIRYMEN.

Four years ago the number of cows milked in the State of New York was within a small fraction of a million. It now considerably exceeds even that high figure; for the dairy business has been greatly extended since the census of 1845. No branch of rural industry presents greater facilities for improving a farm, for increasing its capacity to keep more cows and enlarge the annual receipts of the husbandman. By carefully saving all the manure, both solid and liquid, made by domestic animals, it will be easy to raise an immense amount of excellent food for cows, on a comparatively small surface. For this purpose, corn, carrots, potatoes, pumpkins, clover and herd's grass are among the most available crops which we have seen cultivated.

The dairyman, by uniting skilful tillage with grazing, will experience little difficulty in feeding a much larger number of cows than is now generally kept in New York and Ohio. Of course, he will need more funds to purchase more cows, and more help to milk and take care of them. Many, however, who do not lack the wherewith to procure either labor or cows, fail to see their way clear, how to raise six or eight tons of sweet nutritious forage an acre, by planting corn quite thick in drills for that purpose. Like all other farming operations, this must be practiced repeatedly to be well understood. We have seen some failures, but more cases of the most satisfactory results. There is some trouble, particularly in wet weather, in curing a luxuriant growth of green maize. Being cut when most succulent, just as the kernels begin to form when the whole plant abounds in saccharine matter, it needs to be exposed to the sun, turned over, like thick new mown grass, and thereafter to be bound in small bundles and set up to make in small bunches or stooks. The Rochester City Milk Company, and other milk-producing establishments with which we have been acquainted, have found the raising this kind of forage as well as carrots, profitable. At the South green rye, oats and peas are fed to mules, horses and cows. On good land, the expense of growing additional feed for dairy cows, i. e. something beside common pastures and meadows, is much less than one who has never tried it would suppose.

A top-dressing of lime and gypsum spread over pastures and meadows in the spring of the year will often impart new vigor to the grass, and add greatly to its yield for the season, if not longer. Sometimes more grass seed should be sown, and the ground well scarified with the harrow. Ashes are particularly valuable to scatter over all fields where a good crop of grass is desired. Swamp muck sweetened with caustic lime in the form of compost, is generally worth more than it will cost, to be used as a top-dressing on meadows and pastures. Applied to hoed crops it is also valuable.

As first rate dairy cows are always in demand at fair prices, every farmer should be careful to raise all calves, particularly females, from a family remarkable for good milkers. In this way the dairies of the country will improve rapidly. Much depends on the keep of calves and heifers, and the way in which the latter are treated during the two first years they are milked, in fixing their productive value for dairy purposes. Perfect regularity in feeding, uniform kindness and gentleness, as well as milking reasonably fast and quite clean, are matters of practical importance. A young cow which is much inclined to elaborate a large flow of milk will secrete more, if it be drawn three times in twenty-four hours, and at eight hours between each milking than she would if milked but twice a day. Salt cows regularly, or have it under a shed where they may eat what they will, after having been restricted a little, till accustomed to a full supply by degrees. Have your pastures as near the milk house as practicable that your herd be not taxed with a long walk to and from their fields to the yard or cow house.

TEXAS WHEAT.—VALUE OF LIME.

It is stated by a gentleman from Corsicana, in Limestone county, that about forty thousand bushels of wheat have been raised in Limestone and Navarro counties this season. A part of this was harvested as early as the 9th of May, and it is of an excellent quality. The grains are plump and large, and the wheat, it is believed, will average over sixty pounds to the bushel. A large quantity of wheat has been raised in Trinity Valley above Dallis. The experiments in the culture of this grain, indicate that the whole region, watered by the Trinity and its tributaries above Smithfield, is as well adapted to the culture of wheat as the best wheat growing regions in the middle States. The soil, in that section, contains a large proportion of lime, and it is probably owing to the presence of this mineral that it is better adapted to the culture of wheat than the soil near coasts. There is a belt of country extending quite across Texas from the Red River to the Rio Grande, and including most of the undulating region of that country, that is as well adapted to the culture of wheat as any portion of the Union. This section comprises at least thirty millions of acres, and may at some future day, yield breadstuffs sufficient for the consumption of more that ten millions of people.

We clip the above from a Texas journal for the purpose of impressing on the mind of every reader the importance of lime in all soils, not merely for the production of wheat, but of all other cereal plants. It is most striking to note the difference in general fertility, between limestone and ordinary granite lands. The average crops of the latter, especially after a few years' cultivation, do not exceed a third of what are grown on common calcareous soils. Lime seems greatly to improve the mechanical texture of all cultivated lands, as well as furnish plants with their appropriate mineral food. It is instructive to study the reasons why such soils accumulate near the surface, so bountiful a supply of potash, soda, magnesia, sulphur, phosphorus, chlorine, soluble flint, and rich vegetable mold. Lime is not transmuted into any of these substances; but this mineral serves in a remarkable degree, and in more ways than one, to prevent their loss in premature solution, and by washing and leaching. Alumina, (the basis of pure clay,) possesses similar properties to an equal and perhaps greater extent. Hence, the strongest and most durable soils in the world, combine the two advantages of lime and clay; i, e, they are calcareous and argillaceous in their leading chemical and mechanical characteristics. Now, whilst all know that subsoils lack vegetable and animal mold and that this cold earth is peculiarly lifeless, still, there are few who are wholly ignorant of the fact that, subsoils usually contain more pure clay and lime than the pervious, and apparently richer ground above. To bring lime and clay up to the light and heat of the sun, to the chemical action of atmospheric gases, and to the fertilizing influence of rains and dews, deep plowing is the thing.

If the intelligent reader has reason to believe that his land lacks lime, from the scarcity of that mineral in his neighborhood, and the softness of the water

in springs and wells, its application can hardly fail to improve the soil. If it can be had at a small price, the dose should be often repeated in the course of successive crops, that the lime may be thoroughly incorporated in the whole texture and mass of the earth. With all needful facilities for its cheap transportation, lime is so abundant in this country, that before many generations pass away, no farming district will do without this important element of fertility. The mineral which makes the Cherokee country in Georgia, the Trinity valley in Texas, and that of Genesee, in New York, so famous for yielding wheat, will be applied in due quantity, to the free sand stone and granitic soils of other regions. It is a mistake to suppose that the application of one or two small doses of lime will form a truly *calcareous* soil. Such a result can be economically effected only as the work of years, and after much mixing by tillage with the plow, harrow, cultivator and hoe. A regular system of liming carried through many seasons, on a moderate scale, will doubtless bring about a most salutary change in the strength and productiveness of the land.

Farmers should investigate the peculiarities of every kind of husbandry; and be able to distinguish closely between all practices which impair and all that improve the soil. Nothing is easier than to be mistaken and disappointed in these results. Extreme caution in trying experiments on a large scale is the only safe course; but a little experimenting will harm no one, and often brings to light some important improvement. There are many millions of acres that greatly need improvement; and still other millions whose natural fertility should be saved from any deterioration.

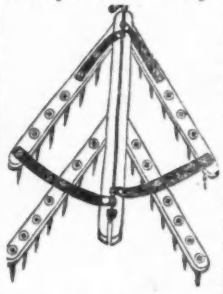
A DROP FROM THE CORNICE.

Messrs. Editors:—As I have recently become a subscriber to your valuable paper, I have, of course, become one of its readers. Although a Mechanic, and not "a Farmer," I esteem its contents of greater value than its subscription price. Now, though I may be but a small *drop* in the stream, if I chance to get into it, I will accept the invitation friend Peters has given in his fable of the Raindrop, in your January number, and come out from under the cornice; yet I have not the vanity to think that he had me "in his eye" when he gave the invitation.

As great things cannot be expected from so small a drop as I am, I will put myself in motion by trying to answer a small question, suggested by your correspondent, "G. S. G.," in your January number, though I am not an Architect. He says, in a parenthesis, "that his house looks steeper and more gothic than his drawing; thongh he don't know why, as the proportions are the same." He has undoubtedly drawn the end in exact proportion with the exact angle of the roof. Had he drawn a view of the end only, the roof would then have appeared as steep in the drawing as in his house; but as he has to this added a view of the side, it indicates that the point of observation is not in front, but at one side of the front, and from this position the end of the house itself must appear narrower while the height appears the same, consequently the angle of the roof would appear more acute. If these laws had been observed, the drawing and house would have appeared to have the same proportions. I will close by hoping to say something in my next to interest more directly the Horticulturist and Farmer. D.—*Albion, N. Y.*

GEDDES' HARROW.

"The Geddes Harrow, so called from the inventor, George Geddes of Tyler, Onondaga County, in this State, is considered by those who have used both, to be superior to the square harrow, inasmuch as it draws from a centre, without an uneasy and struggling motion, and is of course easier for the team. The accompanying cut is so simple that it needs no description. Being hung on hinges, it is easily lifted when in motion, to let off collections of weeds, roots and other obstructions. It can be doubled back, and is of very convenient form to be carried in a wagon about the farm. Some have teeth put in as in common harrows, simply by being driven in from the upper side; others have the teeth so made as to be let through the timber from the under side, with a washer below, and a nut and screw on the top; this avoids the loosing of teeth, by preventing them from dropping out, as in the common harrows.



There are several sizes containing more or less teeth as required. The following table shows the number of teeth in the several sizes, and their prices:

14 teeth, for one horse,	$8.00
18 teeth, for one or two horses	9.50
22 teeth, for two light horses,	11.00
26 teeth, for two heavy horses,	13.00
30 teeth, for two or three horses,	15.00

The work performed by this harrow is better, with one operation, than can be done with a common A harrow by going twice over the ground."

This Harrow may be obtained at the Albany Agricultural Warehouse, Albany, and at the Genesee Seed Store and Ag. Warehouse, Rochester. Also of the principal manufacturers and dealers in implements throughout the country.

An Agricultural School.—We are credibly informed that Mr. Wilkinson of Germantown, Pa., seven miles from Philadelphia, has an Agricultural School for the instruction of young gentlemen in Scientific and Practical Agriculture, and that a thorough English education, with four modern languages, is given as an adjunct to the scientific course. Every branch is thoroughly and practically taught. The school is called the Mount Airy Agricultural Institute. Its location is proverbial for health. It is said that the character and advantages of this school are not excelled by any in the Union. The Tuition year is divided into two terms of five months each; the summer term commences on the first Thursday of April, and the winter term on the first Thursday of October. The charge for tuition, board, washing, fuel and light is $100 per term, payable in advance.

Persons wishing further information relative to this school, will address the principal, John Wilkinson, Germantown, Pa. Reference is also given to the following gentlemen: Gen. P. S. Smith, Philadelphia; Thos. McElrath, Esq., N. Y. Tribune, N. Y.; Hon. Thos. Baltzell, Tallahasse, Fa., and Richard Peters, Esq., Atlanta, Ga. — *Southern Cultivator.*

THE PLOW—ITS HISTORY AND IMPROVEMENTS.

BY HORACE L. EMERY.

FRIEND MOORE:—With what cuts I have been enabled to obtain in time, I resume the subject of the Plow, commenced in your March number.

I closed my remarks by speaking of the improvers of the plow. Among others, it is but justice to name E. G. MATTHEWS as one of the most ingenious of the later improvers, but more particularly as an inventor of machinery by which the wood work of the plow is made with perfect uniformity and precision not otherwise attainable, and by the aid of which six to twelve men are enabled to make more and better plows than three or four times the number could make in the usual way. The effect of the use of this machinery has been to give a character to the plows made by it, and to establish the confidence of the public in their excellence. It has, also, in a great measure, been the key to the success of some of the largest establishments engaged in their manufacture.

With regard to the form of plows, much improvement has been made by combining more perfectly the power of the wedge and screw, (which, by the way, are the only two natural powers combined in the mould board of the plow). Very many patterns present a broad and thick, stunt wedge, with too much of a cross cut to the edge, not unlike that shown in Fig. 1, (of plow inverted,) while others, of later and more approved model, are thinner and more pointed, as shown in Fig. 2. This difference is observable between the American and the approved wrought iron English and Scotch plows. One great obstacle in making plows after this form, as shown in Fig. 2, has heretofore been the deficiency in the strength of cast iron when made thin and pointed and sufficiently hard. Such, however, have been the improvements in the combination of the various iron ores, as to obtain strength, with less weight and thickness, nearly equal to malleable iron. Although rather soft, this iron bears the hardening process to almost any degree, and can be used in those parts mostly exposed to wear, without endangering the strength. As this fact has become known, the cast-iron plow has become more pointed and wedge form, and the approved modern American plow will not suffer by a comparison with those of England or Scotland.

FIG. 1.

FIG. 2.

Much depends upon the curves given to the mould-board. They should be so formed as to bear the earth equally and lightly over the whole surface, and these curves carried so far as to completely invert the soil. In grass or sod land it is not desirable to break the furrow slice, and good length of mould-board is required—nearly in the proportion of width to length, as one to four—while, in stubble and tilled land, a shorter mould-board is preferred, say width to length, as one to two or two and a half; the same rule should be observed in both cases.

I have formed the opinion, from close observation, that the best form for plows (and the best plows now in use come very nearly to this standard,) is that which will lift, carry, and turn the soil in straight lines, from that point upon the forward part of the share where it first begins to rise, to the point where it leaves the mould-board. For instance, in a furrow twelve inches wide, the sward would begin to rise after the point had penetrated three to five inches; one edge of the slice would rise from this point by the forward motion of the plow, until, at the point where it leaves the hind end of the mould-board, it is twelve inches from the bottom of the furrow. What I would term the straight line would be a fulness to a straight-edge between these two points. This fulness to a straight line should apply not only to one edge of the slice, but to the whole surface of the mould-board.

Again, to work easily and turn a smooth furrow, the slice should also be fully supported crosswise; therefore the mould-board should have a fulness at right angles or nearly so, with the straight lines before described, and as represented in Fig. 3.—When the mould-boards are so formed as to present irregular curves, or so as to lack this fulness, or to be too full, the friction becomes unequal, the draft of team and labor of plowman are increased, to say nothing of the imperfection of the work performed.

FIG. 3.

In Fig. 4 is shown a form which, although regular, is not in accordance with the foregoing description. A plow which presents the straight lines in these directions is inferior to the first in operation, in all respects. Therefore, if I am correct, a farmer purchasing a plow will find a simple straight-edge of great service in making a good selection.

FIG. 4.

Thus much for the form of the mould-board.—Another improvement now adopted in nearly all late patterns, is that of forming the share so as to renew the front portion of the plow and the landside, so as to extend the whole length and next the share. By this arrangement the strength of the whole base and front of the plow is preserved, and when the old point and landside are replaced by new ones, the original strength, form and effect are restored. The chilling process being applied to the edge of the share and the base of the landside and mould-board, those parts are not only made to wear sharp, and of three or four times more service, but actually create less friction—the difference being the same as that between steel and iron sleigh shoes upon the ground. *Albany, N Y., March*, 1849.

[To be continued.]

BONES.—That world-renowned chemist, LIEBIG, says that a single pound of bone dust contains as much phosporic acid as one hundred pounds of wheat. From this we can easily perceive that there are bones wasted on every farm sufficient to manure the entire wheat crop. This, to many, will doubtless appear strange, but it is nevertheless true.

THE SALT found in the great salt lake in California, is said to be superior to any now in use, for preserving butter, beef, &c. It is the strongest ever yet discovered.

NEVER grumble at what you cannot prevent; you have no right to grumble at what you can prevent.

EXPERIMENT IN WIRE FENCE MAKING.

BY D. KINGMAN.

MESSRS. EDITORS:—Believing that my brother farmers feel an interest in whatever experiments others may try, whether useful or otherwise in themselves considered,—especially if facts are stated, so that they can practice, throw away, or improve upon them, as their judgments may direct—I have been induced to send you my experience in making wire fence.

During the last fall I constructed 104 rods of wire fence in the following manner: I placed red cedar posts one rod apart, the posts being sawed about 3½ inches square at the bottom, and 3½ by 2 inches at the top, and set firmly in the ground to the depth of 2½ feet. I then bored holes through the posts with a ¼ inch bit—the upper one 4½ feet from the ground, and then 9, 8½, 7½ and 6 inches below, using five wires. Five inches below the lower wire I placed a board fourteen inches wide, (with a short post in the centre to which I nailed the board,) which comes near enough to the ground. I then drew the wires through the posts and strained them by means of a lever, one end of which I stuck into the ground. I then looped the end of the wire around the lever near the ground, and while one is drawing upon the top of the lever, I plug the hole tight with pins of red cedar, previously prepared. I usually strained the wires 15 or 20 rods at a time, then spliced the wires by looping and twisting the ends, and proceeded in like manner again. After the wires are in and the boards on, I take pieces of wire of the right length and make one end fast to the upper wire, and then wind it round the wires below till I come to the board through which I bore a hole and fasten the lower end of the wire; three of these wires between each two posts, thus fastening it all together.

The upper and lower wires are No. 10, and the others No. 11. I bought my wire of Messrs. PRATT and Co., of Buffalo, at $7,50 per hundred. The five wires weighed 355 pounds. The wire that I used to weave in up and down was No. 16, and cost 10 cents per pound; it took 25 pounds. My posts I bought in the log (pretty large ones,) at $12 per cord; one cord made 105 posts, the number used. It took 2000 feet of hemlock boards, which I reckon at $7 a thousand. The saving of the posts was $2,25. The cost foots up as follows:

355 pounds of wire, at 7¼ cents,	$25,02
25 pounds of wire, at 10 cents,	2,50
One cord red cedar posts,	12,00
2000 feet boards, at $7,	14,00
Sawing posts,	2,25
Making the cost of materials,	$55,77

Which being divided by 104, the number of rods of fence made, gives 53½ cents as the cost per rod—aside from nails of which I kept no account.

Some of your numerous readers may be anxious to know whether such fence will answer the purpose in all cases. I can only say that mine is a road fence, and that when it was built, there was a good crop of pumpkins lying in the field along side, where they grew, and that notwithstanding many cattle and hogs made the attempt at them, they did not succeed; and my short experience goes far to convince me that no cattle, hogs or fowls will get over or through it.

Ridgeway, N. Y., January, 1849.

THE above article should have been published in our February number, but was overlooked. Its facts and figures are important.—ED.

MORE ABOUT WIRE FENCE.

BY T. C. PETERS.

MY friend MYRON ADAMS, Esq., has another good article on the subject of wire fences. As he is the only one among us, as yet, who has made the experiment, I concede to him the right to speak by authority.

But he does me too much honor where he writes me "*judge*," and I fear a wrong impression might be created if I were to leave the error uncorrected. I am not a judge, never was, and never desire to be a judge. The highest elective office I was ever elevated to, was Trustee of a School District, and some idea may be formed of my popularity when I say that I never got a single vote for re-election! Perhaps I am wrong in saying that I have never held any other elective office, for I have been several times honored by being elected President of the Genesee County Agricultural Society. I am free to say that I am prouder of that office than any other the farmers have it in their power to bestow, and am more anxious to discharge the duties in a proper and satisfactory manner.

But to the fence. I have been confined so much of the past month by sickness, I have neglected the subject entirely. Mr. ADAMS may be right as to the number of strands, though I cannot see the necessity of over five in four feet, for he says that is the proper height. I however won't quarrel with him. All I want is to keep the matter before the public, and ultimately we shall get something that will be reliable and useful. I am entirely confident that within ten years wire fence will be the prevailing fence in this country and abroad, because it will be the cheapest, most durable and ornamental of any that can be built. There will be failures of course, but the very necessity of the thing will force it to perfection.

Mr. ADAM'S practice is worth all my theory, and I learn very much from him each time he writes. He has adopted the only true method of mending, or joining the wires, and that by winding. The same method is used at the suspension bridges. I commenced agitating this subject of wire fence about a year ago, and although I have been often ridiculed and called visionary, I have not been deterred from keeping it up. I am amply repaid by the great amount of knowledge which has been thus far brought out. And before another year goes round, the building of this kind of fence will be no longer an experiment. I fully agree with Mr. ADAMS that farmers ought to be satisfied if they can build a durable fence for fifty cents per rod. *Darien, N. Y., March,* 1849.

GRAVEL FENCE.

O. E. GARRISON, of Troy, Ill., gives in the Prairie Farmer, the following mode of constructing gravel fence. It looks quite practicable:—"Put up a wall of gravel and lime three feet six inches high, (the same way they build gravel houses) eight or ten inches thick at the bottom and three or four at the top. When the last layer is in the moulds, put in sticks (strips of lath will do) eight or ten inches long, leaving them six inches above he mortar, and sharpened like pickets; you will then have a fence four feet high that will last forever.

If you want it to look nice, take sand and lime, each an equal quantity, add any coloring matter to suit your fancy—lay it on the wall and mark it like stone blocks. It will make a fence nobody need be ashamed of, at a cost of not more than a dollar a rod."

VALUE AND CULTIVATION OF BARLEY.

BY MYRON ADAMS.

MESSRS. EDITORS:—My attention has been called to the crops of barley raised in this town for which premiums have been awarded by our State and county Agricultural Societies during the last six years. I think the value of the barley crop is not duly appreciated by our farmers, and perhaps a statement of what has been done here may stimulate others to engage in its culture. I have not been able readily to find full statements of all the crops for which premiums have been awarded by our Society, and have therefore taken nine crops which I find reported in the Cultivator. The largest crop, grown by S. B. DUDLEY, was 69 bushels. The least crop of the nine was 48½ bushels—the average 56½ bushels. Three of these crops were grown by Mr. BRADLEY, and the average of the three is 59½ bushels. Mr. DUDLEY also raised three of these crops, and his average is 57½ bushels.

These crops were all grown after corn—the land having been manured for the corn with from 15 to 30 loads of unrotten barn yard manure. The land was but once plowed, thoroughly harrowed, and in some cases rolled and plastered. The seed was generally sown dry, but for some of the crops it was soaked in the strong black juice of the barn yard, and rolled in lime. One important feature in these crops is, they were heavily seeded. In most of them 3 bushels of barley per acre were sown. The average expense per acre of growing these crops I think will not exceed $10, including rent of land—and the value of the crop per bushel will average 50 cents. The amount of the average of these nine crops is 56½ bushels, at 50 cents per bushel, would be $28 25 deduct expense of cultivation—$10 would leave a profit of $14 per acre.

Another thing in favor of this crop is that the land is only occupied by it for about three months, and is then in the very best state for a crop of winter wheat. I apprehend the reason why this crop is so unpopular with farmers is that when they raise barley they sow it upon poor land, in an exhausted state, and quite too many acres of it. It ripens when they are engaged in their wheat harvest, is suffered to stand until it is dead ripe, and is then very disagreeable indeed to handle. Our best growers of barley do not sow over two or three acres, sow it easily and harvest it as soon as the stalk begins to whiten below the head. It is then pleasant to handle, and the straw is better for fodder than the straw of any other grain. With good culture it is a very sure crop. It is sometimes smutty but never when the seed is limed. There is a great temptation to sell the crop for distilling when the price rises to 60 and 70 cents a bushel, as it has the two last seasons—but I think farmers will always find it a profitable grain for consumption. Grind it or soak it and feed it to hogs, horses, working cattle, poultry—any thing but milch cows and breeding sows. *East Bloomfield, N. Y.*, 1849.

SEEDING WITH CLOVER.—AGAIN.

BY F. W. LAY.

MESSRS. EDITORS:—Your reviewer of this month thinks I labor under a hallucination, in asserting that clover will not grow when sown in the spring on the wheat crop, with once plowing a sward; and says "that if cast early enough, before the frosts of spring have ceased to elevate and crumble the soil, so as to cover the seed, it never fails if the seed is good." Whether this is his mere *ipse dixit*, or the result of any experiments or observations, he does not inform us; but he probably reasons from theory instead of experience;* and as this may be important for some to know in order not to be disappointed in crops and rotations, I will state my observations on the subject.

The first time I observed it was some six years ago in making an alteration in the lots. I brought about an acre of clover sod in with my summer-fallows, which I turned under and sowed with wheat—the soil a deep rich sand. The next spring I seeded the whole with clover; have forgotten the time of seeding. The part summer-fallowed grew finely, and was very thick, while directly side of it, where the clover sod was, scarcely a plant was to be seen.

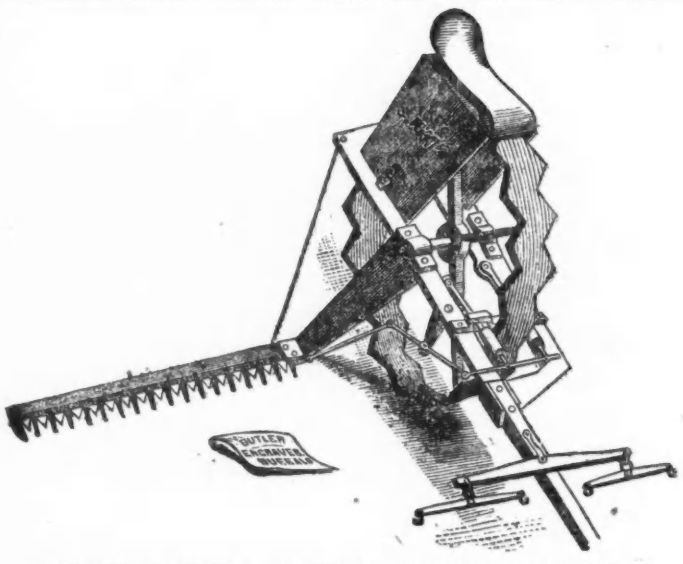
The next year I had a lot of nine acres, about three of which was planted with corn and the remainder in wheat; and as I wished to get it all in one crop, I plowed it all in the fall and sowed it with wheat. The next spring I sowed on clover seed, as sown in the spring as I could after the snow was gone. The soil was a gravelly loam. The three acres where the corn was, the clover grew very thick and rank, while directly along side, for the whole length of the lot, which was sixty-three rods, not a plant was to be seen. I afterwards turned over three acres of wheat stubble in the spring and sowed with oats and clover, dragging in the clover seed with the oats. I watched this carefully; the plants came up but soon began to wither, and, by midsummer, were all gone, as the whole lot was alike. I am not certain but the dry weather of summer may have killed this, but the two first cases to me were fair and satisfactory. I have also noticed it in several cases on my neighbors' grounds, and have never known a different result. How it might be in some soils and circumstances, I know not. Why it should fail with once plowing, any more than several, I cannot tell. *Greece, N. Y., February*, 1849.

* Our reviewer is one of the most experienced practical farmers in Monroe county.—ED.

IMPROVEMENT IN NEW ENGLAND.—The subject of farming, or rather of improvement in the mode of farming, is beginning to attract a little more notice than it formerly did; and amidst much prejudice and ignorance, some of our best farmers are thinking and talking about how they shall turn their labor to better account. They begin to see the necessity of connecting science with agriculture. As an evidence of an increased interest on the subject, I will mention the fact, that a few weeks ago, a "farmers' club" was organised in this place, for the purpose of "Mutual improvement in the art of farming;" and the subject of "Manures," was proposed for discussion at our next meeting. *Warren, Ct., March*, 1849. H.

PEA BUGS.—*Friend Farmer*:—Not having bugs in my seed peas for several years, I claim, in behalf of all concerned, to tell my story. My way of doing it is, to sow early peas, and as soon as they are ripe, sow them for a second crop the same year. No bugs will be found in the last crop. Whether the same time of sowing of last year's seed or of keeping the same to the second year I know not, not having tried it. My first crop I have found usually stung badly; but by sowing immediately, the insect has not time to mature, and leaves the second crop untouched.

Hinmanville, March, 1849. CEPHUS.



KETCHUM'S MOWING MACHINE—PATENTED JULY, 1847.

KETCHUM'S MOWING MACHINE.

THE information in our possession relative to this machine induces us to recommend it to the attention of farmers. The manufacturer states that—"This machine is simple in its construction, and made mostly of iron, and not liable to get out of order. It is capable of cutting from 16 to 20 acres a day; and the grass when cut by it falls back to the rack bar, and lays smooth and even on the ground, in a proper shape to dry—thereby saving the time and expense of spreading it. In meadows that are considerably broken and uneven, as well as those which are smooth and even, it has been found to operate with perfect success, and to all appearance the cutting is the same."

This machine received the first premium of the N. Y. State Ag. Society, at the Annual Fair at Saratoga, in 1847. It was exhibited at the State Fair in 1848, and received a Certificate as the highest evidence of merit. We annex the report of the Committee:

"The undersigned, a Committee on Mowing Machines, *Report.*—That, only one Machine, and that patented to WM. F. KETCHUM of Buffalo, has been submitted to their inspection. They have examined this with care, and have had a full opportunity of witnessing its operation, and in their opinion, the Machine is simple in construction, and performs its work in a very satisfactory and complete manner, accomplishing a great saving of manual labor.

Although the Machine works best in meadows with smooth and even surface, yet, we see no reason why it will not do well on surfaces moderately broken and uneven, not being exposed as we see, to any greater embarrassment from uneven surfaces than the Plow is. As regards its liability to be broken or disarranged in its work, we discover nothing peculiar, and as to this, it can only be determined by longer continued experiments than we have had opportunity to witness.

On the whole, we recommend the Machine to the favorable regards of the Society, and through the Society to the attention of the Agricultural public. All of which is respectfully submitted.

ALBERT H. TRACY,
THOMAS C. LOVE,
W. R. COPPOCK."

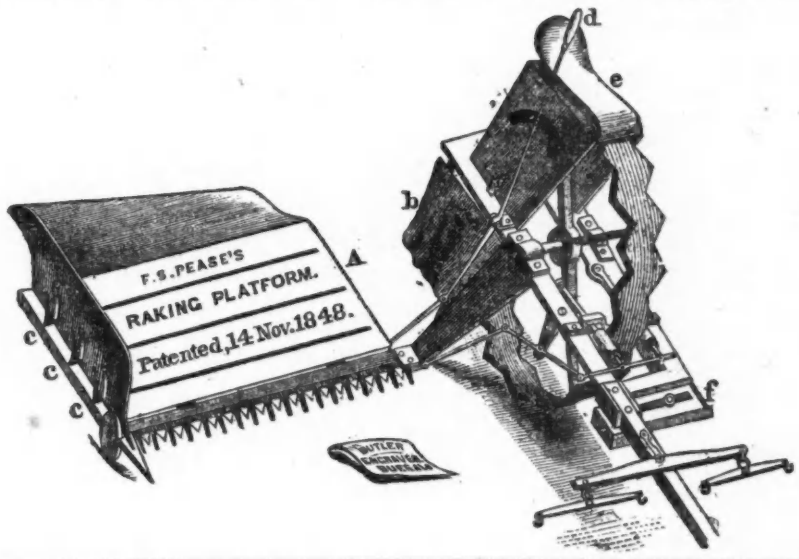
Buffalo, Sept. 7, 1848.

PEASE'S RAKING PLATFORM.

IF this improvement, attached to the machine, above represented, will work as well in a wheat field, as is indicated by the operation of a model we have examined, it will prove a most valuable invention. It is thus described by Mr. PEASE:

"The Raking Platform (A) is attached to the back of the rack bar, it being of the length and width required to receive the grain, and from two to three inches in thickness, consequently not interfering with the stubble over which it passes. When a sufficient quantity of grain has been cut and falls on the platform, it is easily raked therefrom by the person that drives, who sits upon a spring seat (e) and by pulling the lever (d) a short distance, (it being connected with the raking apparatus which is placed in the platform,) it operates immediately on the teeth (c c c,) which are forced across the platform, raking the grain from it, and landing it on the ground between the platform and the apron (b.) By a reverse motion of the lever the teeth fold up and travel back under the platform, and rise behind the turn off, by which they are protected; consequently the teeth in their return, do not interfere with the grain which is constantly falling on and across the platform. The time required to rake the bundle is no more than is necessary for the person who drives to move the lever a short distance. By this simple machine it will be seen that one man is required to drive the team and rake the grain; having at his control the raking apparatus enables him to gather a bundle as large as he likes, and rake it when and where he pleases; and he can make allowance for the thickness and thinness of the grain and rake it accordingly. It is raked in such a manner, that the bundle is landed upon the ground smooth and even, and out of the way of the machine when it comes round for the next swarth, leaving the grain in bundle, and in good condition to bind at leisure.

The Raking Platform is easily attached to any



grass or grain cutting machine. As represented above it is attached to Ketchum's Mowing Machine, which is made to answer a double purpose. A farmer can use it for mowing; and by attaching the platform it is made a reaping machine, capable of raking its own grain, and easily operated by one man.

The great amount of time and expense saved by this invention will be acknowledged when it is known that in all other reaping machines it requires a number of men to operate them, or to bind the grain and get it out of the way, for the next swarth. By this machine one man can drive his team and rake the grain into a bundle and leave it smooth and even on the ground, and out of the way of the machine when it comes round for the next swarth. The attachment of this "*rake off*" to Ketchum's Mower, or any similar machine, enables the farmer to cut his hay, and cut and rake his grain with the same machine."

Further information relative to Ketchum's Mowing Machine, and Pease's Raking Platform, can be obtained of Mr. SAMUEL W. HAWES, of Buffalo, N. Y., who is owner of the patents. See his advertisement in February number of the Farmer, and also in the advertising department of this number.

NOTES FOR THE MONTH.

H. Y., in the last Farmer, demurs to my use of the term *alluvial soil* as incorrect when applied to our formations. He says *diluvial* is the word. I wrote *alluvial*, because every farmer knows the meaning as rich bottom soil; and all the subsoil of Seneca County is of that character. Diluvial, I take it, is often mere barren drift or detritus. The hills of Indiana have been called alluvial by professed geologists. But as I am far from accusing H. Y. of hypercriticism, I hope he will excuse me for demurring to the expletive he puts in a line of Shakespeare.

THE SOVEREIGN PEOPLE.—It must be admitted by all the world that to the people of these United States alone belongs the title of *Sovereign People*. In republican France all is taxed to support a colossal army to protect the government, not against the foreign foe, but against the fickle, factious people, who made the government itself. It takes the enormous amount of $328,000,000 annually to support the republican government of France: whereas the Secretary of the Treasury of the United States estimates our expenditures for the coming year at a little over $33,000,000. The taxation of the United States is only about one dollar and fifty cents per head, and nearly all from a duty on imports. In France it is nearly ten dollars per head, and the revenue is raised chiefly by direct taxation. What would our farmers say to such taxation? 'Tis true that the products of the soil might rise in price, but what would become of those farmers who have little or no surplus to sell? S. W.

CARROTS.

CYRUS T. DEAK has raised in the town of Mt. Morris, Liv. Co., the past season, on seventy-three square rods of land, three hundred and seventy bushels of carrots, about one half of the yellow kind, the remainder of the white field variety. The land on which they were raised, is a black muck, with clay subsoil. The expense of raising the crop was as follows:

2 days work of hand and team plowing and harrowing,	$3.00
4 days planting by hand,	4.00
7 days hoeing, at $1 per day,	7.00
Expense of harvesting at 3 cents per bushel,	10.00
	$24.50
Crop worth 25 cents per bushel,	90.00
Over and above expenses	$65.50

Yours, &c., WM. W. DEAK.

REMARKS.—We are highly gratified with the above result, as it is a subject,—the raising of roots,—that we have taken a great interest in, and the benefits of which we wish to enforce upon our readers. Mr. D. has stated his price for labor, and perhaps the value of his crop, too high—but with that deduction, it is an important result.—ED.

Improved Stock.

SHORT HORN CATTLE.—MR. VAIL'S STOCK.

BY SANFORD P. CHAPMAN.

[Reply to M. Hanford, Jr., and A. G. P., page 43 of present volume.]

As friend H. calls for some testimony in regard to Mr. VAIL's stock, and also asks a few questions, we think we cannot do better than present him a few facts, most of which are already familiar to the greater part of the agricultural public.

At the show of the American Institute, in 1843, Mr. Vail's *Meteor*, then only two years old, was awarded the highest premium for the best bull of any age, competition open to the United States. At the State Show, held at Poughkeepsie, in 1844, *Meteor* was again awarded the first premium for the best Durham bull, and also the first premium for the best bull of any age or breed. At the State Show at Auburn, in 1846, Mr. Vail's *Lady Barrington III*, [for portrait and pedigree of this cow see vol. VIII, p. 212 of this journal.—ED.] received the first premium. At Saratoga in '47, Mr. F.'s *Hilpa* was also successful. In '45 Mr. Z. B. WAKEMAN, of Herkimer Co., purchased two calves of Mr. Vail, a bull and heifer. These obtained the first premiums in their class at Utica in '45, at Auburn in '46, at Saratoga in '47, and the bull at Buffalo in '48.

In 1844, (see the Society's Transactions for '44, pages 214 and 215,) the Society's first premium was awarded to Mr. Vail, for the largest quantity of butter made from 6 cows,* (*all thorough bred Durhams,*) in 30 days, fed on *grass pasture alone*, and that not the best. It will be seen by that statement, that the six cows produced 265 lbs. and 10 oz. of butter in 30 days. One cow, *(Old Willey,)* milk and cream kept separate, produced 52 lbs. and 9 oz. The quantity of milk, accurately weighed and measured from the six cows in one day, was 265 lbs. 10 oz., measuring 134 quarts; averaging for each cow in one day 22¼ quarts.

In the American Agriculturist for 1848, page 294, Mr. BELL, of Morrisiana, gives a challenge for milking stock, (his stock are Durhams,) which is still open. If friend Hanford, or some of his friends who have the "common stock," wish to test their value as *milkers* against the Durhams, this will afford them a good opportunity. We have not the pleasure of a personal acquaintance with Mr. BELL, nor do we know much about his herd; but judging from the animals we have seen, and knowing that they possess the blood of the late Earl Spencer's celebrated herd, we have no fears as to the result.

There are many recorded facts showing the good *milking* qualities of the short horns, a few of which we will briefly mention. Mr. CALVERT, near Brampton, in England, had a short horn cow, which produced 373 lbs. of butter in 32 weeks. In one week she produced 17 lbs. on grass pasture. The imported cow *Dime*, owned by Mr. ALLEN, gave upwards of 30 quarts of milk per day, on grass pasture. Mr. WHITTAKER of England had one cow, *Yellow Rose*, which gave when 3 years old, 36 quarts (wine measure) per day, and when 4 years old 38 quarts. The celebrated herd of Col. JAQUES of Mass., which from the quantity and quality of their milk he has named "Cream-pots," are high grade Durhams; descended on the side of their sire from the imported bull *Cælebs*. While Col. J. owned this bull he received no less than three thousand two hundred and thirty dollars for his services. (A better investment we should think than money in the state stocks.) In a letter to the Editor of the Cultivator, in 1845, Col. J. says: "The different strains of *Cæleb's* blood are now daily talked of, and are eagerly sought after, * * * *particularly* by our *milk-men*." A little farther on the editor remarks—"Particular trials have been made with some individuals of this stock, and they have given at the rate of from *seventeen* to *twenty-one* pounds of butter per week." Truly a *strain* of Durham blood does not *injure* the milking qualities of our native stock. Mr. ALLEN, Editor of the American Agriculturist, for 1848, page 54, says: "For a combination of all these qualities," (viz: good working cattle, good beeves and good milkers,) "and especially as beeves and milkers, we do not think those Durhams which are *properly bred can be excelled*." In the article referred to Mr. ALLEN tells a story of a Durham bull, which we wish friend Hanford to read. We think, however, it will be rather hard for his *quality* feeding to digest.

"It is said," (by whom ? any one that ever bred or owned a pure bred Durham ?) "they are great consumers. In this principle it will be observed is involved the *quality* of feeding." We should like to see the *facts* with *figures* to prove this. We deny the charge; and without the *testimony* we think we have as good a right to *demur* as friend Hanford.

The Editor of the Cultivator in 1845, page 44, speaking of Mr. PRENTICE'S Durhams says: "This herd of cattle cannot be large consumers; after making due allowances for the fertility and production of the land, the quantity of stock kept is certainly remarkable. * * * *Appolenia* is one of the best *dairy* cows we have ever seen."

In 1842 in the New Genesee Farmer, Mr. COLMAN, then Editor, says—"If any man, however, chooses to see this stock in perfection, let him go to the farm of E. P. PRENTICE, of Albany; and if he has *any* prejudices of *any kind* against the stock, and is not prepared to yield *every one* of them, I can only say he is differently constituted from what I am."

We last fall purchased the cow *Charlotte* of Mr. Vail, [for portrait of this cow see plate in February number of Cultivator, for 1848—ED.] formerly owned by Mr. Prentice. We have kept this cow through the winter until February, entirely upon *barley straw;* and yet such is her thrift and the ease with which she is kept, that strangers frequently inquire if we are fattening her. A few years since we kept a Durham bull *Nero*, from Mr. VAN RENNSELAER'S stock, owned by Mr. WARD of Wampsville. During part of the winter we were under the necessity of feeding this bull wheat straw, as he was likely to become too fleshy upon barley straw for spring's service. We don't however suppose that all Durham's will keep with the ease of the two last mentioned animals, but we do think *as a herd they are small consumers.* As to the cow referred to in our previous article we would say, that she is expected to calve in June next, and should we find it convenient, as we presume we shall, it will afford us much pleasure to furnish friend Hanford, and the readers of the Farmer the information he requests.

We would not advise A. G. P., if he is about com-

* The keeping of these cows during the winter previous to the trial, was hay fed at night, and during the day corn stalks and straw in the barn yard. Had the pasture been *first rate* during the time of trial, we presume the cows would have yielded nearly two pounds of butter more per week each.

mencing the dairy business, and has $6,000, to expend it all in Durham cows at $150 each; but we would advise him if he keeps much stock or intends to, to purchase a first rate Durham bull, although it might cost $300. Make up the rest of your herd with the best common cows you can purchase, and by a judicious use of this bull with such change as occasion may require, we doubt not in a few years you will find, (by carefully raising your heifer calves and disposing of your older cows,) the value of your herd greatly increased, and the sum expended for the bull a profitable investment. Friend A. G. P. erred a little in his calculations in not reckoning the value of the calves into his account. A good Durham calf is worth from $50 to $300 when quite young. If he had counted them worth only the smaller sum, it would have made a little difference in his figures. We can hardly think that A. G. P. would suppose any one so foolish as to pay $150 for a Durham cow, and then "*deacon*" her calves! This would be folly in the extreme. At the time of Mr. Prentice's sale in '45, one bull calf, *Tecumseh*, out of *Charlotte*, and another, *Duke*, out of *Matilda*, sold for $200 each. Mr. Vail has sold all his bull calves from his *Lady Barrington, III*, two in number, for $300 each when quite young. Col. Jaques, before referred to, has sold some of his full bloods, when 8 months old, for $300.

There has been no time in England since the sale of the COLLINGS, that the short horns have been in greater demand, or brought better prices than at the present. Mr. BATES, (the breeder of Mr. Vail's Duke of Wellington and Lady Barrington III,) last year let a bull to serve a small herd of cows for seventeen weeks, for *over one thousand dollars*. The short horns belonging to Earl Spencer's estate were sold last year. Eighty-eight animals brought the round sum of $28,717. One bull sold for $2,100. We mention these facts merely as a proof, that, in the words of Mr. ALLEN, "where they have been bred longest they are liked best," and to show the value that is there placed upon this noble breed of cattle. *Clockville, Mad. Co., N. Y., Feb.*, 1849.

BREEDING HORSES.

THE "*Vermont Agriculturist*" for January, 1849, contains an article with the above head. As that paper has been discontinued, I am under the necessity of asking you to insert in the Farmer the following reply to the article alluded to.

The writer in the *Agriculturist* says—"The horses whose stock in this State have proved superior, were without an exception, *thorough-bred horses*. * * * The four horses that have been most celebrated in the State, are the 'Morgan,' the 'Cock of the Rock,' the 'Magnum Bonum,' and the 'Old Telescope.' The Morgan stock has, as a general thing, been most noted. The pedigree of the original Morgan goes directly back through 'True Briton' and imported 'Othello,' to 'Musgrove's Arabian' and 'Childers'."

In relation to these statements, the first question that arises is, What constitutes a thorough-bred horse? Perhaps it will be replied, the English race horse. And this answer may for the present be received as correct, without stopping to inquire into the origin of the race-horse.

Is it then true, that the four horses named were thorough-bred? Take them in order: First, the Morgan, whose stock the writer of the article in the *Agriculturist* says "has, as a general thing, been most noted," (a conclusion, by the by, which I think will not be disputed.) Was he a thorough-bred horse? His sire is admitted to have been a horse called True Briton or Beautiful Bay, obtained (stolen it is said) from Gen. JAMES DE LANCY, of New York. There have been several horses by the name of True Briton. What was the blood of the one mentioned? The late JOHN MORGAN, of Lima, N. Y., stated, (see Albany Cultivator, vol. IX, p. 110,) that he was got by the imported horse Traveller, (Morton's Traveller.) Mr. M. kept him several years, during which time he begot the old or original Morgan horse. But the writer in the Agriculturist says the sire of the original Morgan was imported Othello! Where is the evidence of it? The true Briton, by Othello was on the turf and won matches in 1765–6. (Am. Turf Register, vol. VI, p. 5.) The old Morgan was foaled in 1793. Is it probable he was got by a horse so old as to have run races *twenty-eight years before?*

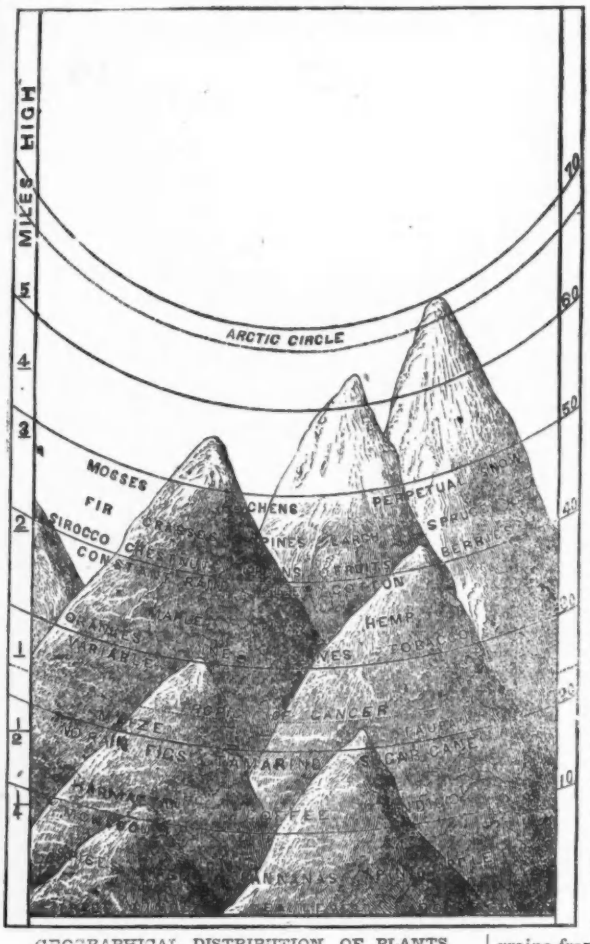
But admit that the sire of the old Morgan horse was a full blood race-horse. What was his dam? JOHN MORGAN, (before named,) states that she was got by a horse called "Diamond;" he by "the Church horse;" and he by the imported "Wild-air." Nothing is said by MORGAN of the blood of the *granddam* of the Morgan horse, or the blood of the dam of "the Church horse." The inference is, therefore, that they were of the common or *cold* blood. The dam of "Diamond" is said to have been an "imported" mare. (See Albany Cultivator for 1846, p. 19.) "Wild-air" was a well known English race-horse. Now if he begot "the Church horse" on a common mare, the latter horse would of course have been half blood; if "the Church horse" begot "Diamond" on a full blood mare, he would have been three-fourths blood; and the latter horse having begotten the dam of the old Morgan on a common mare, she would have been *three-eighths* blood. Hence, if True Briton was a full blood or thorough-bred horse, the old Morgan, inheriting half or *eight-sixteenths* of his blood, and *three-sixteenths* other racing blood, (from his dam,) would have been *eleven-sixteenths* blood. *Does this make a thorough-bred horse?*

The writer in the Agriculturist next gives what he calls the pedigree of "Cock of the Rock."—He says he was got by Duroc; his dam by imported Messenger. But is this such a pedigree as would satisfy a breeder of blood horses? Admit that Duroc and Messenger were thorough-bred horses—(though it is well known to turf-men that there is a *flaw* in the pedigree of the former)—is the case then made out, that this "Cock of the Rock" was thorough-bred? On the side of his sire his pedigree may be accepted. His dam was half Messenger; but what was his *grand-dam?* According to this "pedigree," "Cock of the Rock" was half Duroc and a quarter Messenger—that's all. *Does this make a thorough-bred horse?*

He then goes on with "Magnum Bonum," who he says was "sired" by imported Magnum Bonum; but his dam is not even mentioned; and according to this statement he was only half-blood! This is the third of his "thorough-bred" horses.

As to "Telescope," the fourth horse mentioned, it is merely stated that his pedigree can be "traced [in the same way the others are traced?] back to the highest strains of English blood."

Comment on such "pedigrees" is unnecessary. * *



GEOGRAPHICAL DISTRIBUTION OF PLANTS.

BY L. WETHERELL.

The above illustration is from "Rodgers's Scientific Agriculture;" and was designed by the author to aid the mind in acquiring a knowledge of the distribution of plants with regard to height; to show the latitude of prevailing winds, and the altitude of no rain and of almost constant rain. The figures on the right hand side of the cut, denote the degrees of north latitude; those on the left denote the height of mountains, graduated in miles. There is also an attempt to show the lines which separate between the elevation of the different species of plants; "and the line of perpetual snow."

It is a well established fact that a greater degree of cold prevails in the upper regions of the atmosphere than at low levels. This is manifest from the fact, that, the mountains of the equatorial region at the height of 16,000 feet are covered with perpetual snow; the height of the snow line diminishes in passing from the equator to the poles of the earth, until it rests on the sea level at 70 or 80 degrees north latitude; this is true of the summer temperature: the snow line is much further south when the sun is in the tropic of Capricorn. According to Prof. Leslie, the mercury in the thermometer falls one degree for every 300 feet of ascent. Hence an elevation of 15,000 feet near the equator produces the same changes in the vegetable kingdom as the distance of 5,000 miles north of the equator on the level of the sea. An elevation of 7,000 feet in the tropics gives a temperature the same as that of France, which is 49 degrees north latitude.

Humboldt, in his travels in S. America, has given a sketch of the vegetation of the Andes, commencing in the torrid zone on the level of the ocean, and ascending to the region of "eternal snow." A condensed view of this sketch with the aid of the cut, will enable the reader to gain a very correct idea of the distribution of plants,—remembering always that altitude from the level of the sea produces the same effect upon climate and plants as travelling north or south of the equator.

1. *The Tropical Zone.* This is called the region of palms, and extends from the level of the sea to 3,500 feet. Here grow in perfection the splendid palm family, the sugar-cane, the coffee plant, the tea plant, the orange, the lemon, the fig, the citron, the pine-apple and the banana; also the region of the nutmeg, cinnamon, clove; and of the various fragrant and medicinal gums. Here are found, also, various and valuable kinds of wood, as the mahogany, the iron-wood, the teak-tree, and the bread-fruit-tree; the various kinds of dye-wood, as logwood, camwood, &c. Wheat does not flourish at this altitude: maize, rice and millet do—; these with the bread-fruit, plantain, cassava, manioc roots, taro-root and the yam, furnish food for more than one-third of the human race.

2. *The Temperate Zone.* This region [illegible] in great abundance the grains from which man's bread is made. Here the wine-grape is cultivated in the greatest perfection; also the apple, pear, plum, peach, cherry, apricot, &c. Some of them flourish better in the northern and others in the southern part of this region, or what corresponds thereto, the less or greater altitude.

3. *Arctic Zone.* In passing from the temperate to the arctic zone, the limit of the vegetable world is soon found: very few plants are seen above the elevation of fourteen thousand feet. Licheus are the first that appear on the outside of the vegetable world, whether altitude or latitude be regarded. More than 2,400 species are known. As you approach the limits of the temperate zone, shrubs and herbaceous plants appear—then the evergreens, mingled with the birch and willow. Wheat scarcely comes to maturity—some of the more common garden vegetables are produced here at an altitude corresponding to the temperature of between 60 and 70 degrees north latitude.

The dwarf birch and willow are the trees nearest the snow region: the former seldom exceeds two feet in height, and the latter is still smaller. The reindeer moss grows beyond this limit, proceeding north. As you approach the equator from the region of the dwarf birch, the common birch, the mountain ash,

and the Scotch fir, two or three species of the willow, a species of the alder, the bird-cherry, the aspar, the goose-berry and the rasp-berry; and as we go on south we arrive at the northern limit of the ash, the oak and the beech. The northern limit of the oak on the Atlantic coast of Norway is 63 degrees north latitude. On the eastern part of Europe on the borders of Asia it is not found north of 57½°: a fact showing the difference of climate between eastern and western Europe. On the coast of Norway the spruce fir is not found north of 67°; the Scotch fir extends to 70° and the birch to 71°.

The birch unfolds its leaf when the temperature any time during the month rises to 52 degrees. It has been found that barley may be produced where the mean temperature during 90 successive days rises to 48 degrees. It has ripened in Norway under the 70th degree of latitude. In European Russia wheat scarcely ripens at 60°; and the limit of it in Kamskatka, the eastern part of Asia, is 51°; and on the eastern coast of America not beyond 52°. Wheat demands a warmer climate than oats or barley. The apple does net ripen north of 62° in northern Europe, nor north of 57° in eastern.

Humboldt estimates that the cultivation of the vine succeeds only in those climates where the annual mean temperature is between 50 and 68 degrees. The mean temperature may be as low as 48°, provided the summer heat rises to 68. In the old world these conditions are found true as far north as lat. 60°; and in the new not beyond 40°, and ceases in both within 30° of the equator. Thus, as the reader will observe, the region for vineyards is twice as broad in the old world as in the new.

The orange and lemon require an annual mean temperature of 62 degrees.

I have endeavored in this communication to give the reader a sketchy, outline view of the distribution of plants. I am indebted to "Rhind's History of the Vegetable Kingdom" for some of the facts here given.

I propose to present in a future number of the Farmer some considerations on the subject of climatology, which is intimately connected with the present. I shall then have occasion to refer the reader to the cut inserted in the present article for further illustration. *Rochester, N. Y., March*, 1849.

TILE FOR UNDER-DRAINS.—INQUIRY.

Messrs. Editors:—For several years past I have read much in the Genesee Farmer and Albany Cultivator, urging the importance of thoroughly draining all wet lands; and each of them for March has an excellent article on under-draining, from practical farmers, showing its importance, and how soon a return is obtained for the outlay. Many farms are destitute of suitable materials to build drains with, and tile are needed.

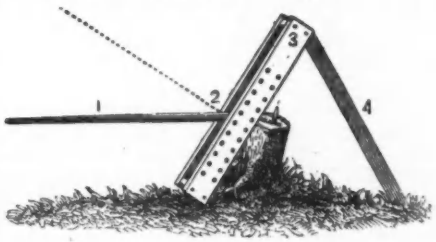
The object of this article is to arrive at the best pattern for tile. I intend to commence the manufacture of tile, this spring, of the following pattern:—The tile over a half circle, three inches in the clear, about fourteen inches long; and flats, the same length of the tile, wide enough to lay the tile on: when laid to brake joints like brick work.

If any of your readers can describe a better pattern for tile, will they please give a description in the Farmer? Alvin Wilcox.—*West Bloomfield, N. Y.*

For price, &c., of Mr. W.'s tile, see advertisement in this paper.—Ed.

A CHEAP STUMP MACHINE.

Messrs. Editors:—You have so many times called upon the readers of the Farmer to become contributors to its pages that I have determined to make the attempt, and herewith send you a description and rude sketch of a Stump Machine, with which last fall I cleared fifteen acres from stumps.



There may be many of your readers living, like myself, on farms not very heavily timbered originally, and which have been cleared long enough for the roots of the stumps to become considerably decayed, to whom it would be some object to obtain a small, cheap and simple stump machine, which would answer their purpose as well as one more costly. In the sketch 1 is a round pole 10 feet long, 4 inches in diameter at the largest end, which is well banded. Into this is inserted a bar of iron 2 by 2½ inches, drawn to half that size at the end inserted into the pole, and 2 feet long. Near the end of this, two notches are cut, a little over 4½ inches apart. In the middle between these, a hole is punched and a link 6 inches long inserted, as seen in Fig. 2, which represents the bar, large hook to hitch under a root of the stump, a link inserted in each, and a connecting hook. The links are made of round ¾ inch Swede's iron, the connecting hook of 1½ do.; the large hook of a bar of old sable iron 18 inches long, bent round edgwise. 3 is a frame consisting of two oak planks 3 inches thick, 8 wide, and 7 feet long, pinned together at the ends through a piece of 4 inch scantling, between the planks. There are two rows, 4½ inches apart, of 1½ inch holes through these planks; the holes being 3½ inches apart in the rows, from center to center. The holes in the right hand row are one inch lower than the opposite ones in the left. Through these holes two iron bolts, as large as the holes, are made to pass for the bar or lever to rest upon.

Fig. 2.

To use this machine, it is set up as seen in the figure; 4 being a board for a brace, the lever placed between the planks, the notches resting on the two bolts, and the hook hitched under a root. Now elevate the end of the lever, (which needs a short pole attached by a ring to the end of a long one,) withdraw the left hand bolt and raise it one hole higher; now depress the end of the lever and raise the right hand bolt; and so on as high as you wish. The cost of the machine was $7—iron $4, making $3. Any blacksmith and carpenter can construct one. With a team and sled or stone boat to draw the machine about, I have seen two hands, on a lot that had been cleared fourteen years, pull in a day from sixty to a hundred stumps, mostly from ten to eighteen inches in diameter. *Ontario Co.*, 1849. T. W.

LUNAR INFLUENCE—THE TIDES, &c.

BY PROF. C. DEWEY.

That attraction holds bodies together, draws bodies towards each other, directs the course of the earth around the sun, influences the motions of the moon and planets and produces the tides, was maintained by wise men before the Christian Era. It has been the glory of modern philosophy to ascertain the *amount* of the attractive power, its *direction*, its *varying action*, and in that way to come at the *solution of phenomena* before inexplicable.

The force of gravitation takes place between the parts of matter comprising the earth, moon, &c. It operates downwards upon the matter around, and sideways upon matter contiguous to a mountain, between two balls of lead, between a pendulum and any large mass of matter. All this is proved by experiment. A pendulum is proved to be drawn sideways towards a mountain.

What is attraction? The answer—and hence the definition of attraction—is, these *effects* must have a *cause*, and attraction is the name given to the *cause* of these *effects*. It is of no consequence what the *nature* of the cause is; the operation is the same as if attraction took place between the bodies, and hence the *power* or *cause*, be it what it may, is named attraction.

You strike a ball and it is set in motion by the blow. You call it *impulse*, or the *momentum* of the *striking* body which moves the ball, and thus you call the *cause*, be it resistance, or repulsion, or momentum acting on the matter, or mass upon mass directly, *impulse*. So, attraction is the name of the cause.

The force of gravitation at the earth's surface in our latitude is sufficient to move a body a little more than sixteen feet in the first second of time, if the body could fall without any resistance or counteracting action. The *amount* of the force is thus determined.

The *law* of the force is ascertained; and the force diminishes as the square of the distance increases. Hence, the moon, at sixty semidiameters of the earth from the earth's center is attracted but one-thirty-six-hundreth as much as matter is at the surface of the earth. This is actually the distance she falls towards the earth at a mean rate, in order to revolve round the earth.

The *force varies* too as the *quantities* of matter, that is, each particle attracts each particle in the sphere of its influence. Hence the attraction of the earth upon the moon is equal to the moon's attraction of the earth. The earth has eighty times the matter to attract the moon, and the moon has eighty times her own matter to be attracted by her in the earth. Their attractions must be equal.

If any one is disposed to say there *is no such thing as attraction;* very well, let it be so. Still the fact is before the eyes of all men, that the earth and moon revolve around a common center in a little more than twenty-seven days, or a little less than those twenty-seven and one-third days, and thus fall towards each other. There must be some *cause or power* which does this, and makes them so fall and revolve; that *cause* is called *attraction*, or in this case, *gravitation*. Again—oxygen and iron unite and form *rust of iron*, and lead and oxygen combine and form *red lead*. *Some power* unites and holds together these substances, and that power is called *attraction*; and because a new compound has been produced, the power is called *chemical* attraction or *affinity*.

We as easily conceive of attraction operating a distance as near or in contact: for *how* it does it, we know not in either case. A magnet holds iron in contact with it, or attracts it at some distance, but we know not the *how* in either respect. But, the *fact* is certain, and some cause or power acts in this case, which is called *magnetic attraction*. Objection to the *name* does not alter or annihilate the *thing*.

The *tides* are one result of this power, called *gravitation*, or an attraction which makes matter gravitate towards matter. Both sun and moon must operate on the earth, and as their power varies at different parts of the earth, matter in a fluid state and capable of being easily moved will be affected by this power. The earth too is in different positions in respect to both the sun and moon, and both are in varying situations in respect to the equator of the earth. Sometimes power of the sun acts with that of the moon, sometimes with direct opposition to it; sometimes the power of the sun and moon act obliquely with or against each other, and with all degrees of obliquity. The moon too, being so much nearer than the sun, exerts a greater power in moving the waters or in producing the tides. Her power in this respect is about two and a half times greater than the sun's at a mean rate. Hence the moon must have the controlling influence on the tides, and the power of the sun will be employed in modifying the effects produced by the moon as the tides are respected.

This is exactly what takes place: and the tides are computed from the relative positions of the sun, earth and moon, varying distances and obliquity of forces. If we call this a *mere coincidence*, we cheat ourselves with the name. I put my finger in the fire, and it is blistered—a mere coincidence. I put iron in the furnace, and it is softened—a mere coincidence. I wish to move my hand to my head, and it moves—a mere coincidence. A man lets a brick fall ten feet on my head, and breaks my skull—a crushing coincidence. Another fires a pistol towards you, and the ball pierces your heart—a bloody coincidence. But—more on the *tides*, hereafter.

A New Kind of Wheat.—Advices from St. Petersburg to the 12th of August, mention that a new variety of the Arnautka wheat has recently been discovered and cultivated in Bessarabia. It is called the Kolus, or large-eared wheat, on account of the peculiar beauty of its ears. At present it is limited to mere seed wheat, and fetches twice the price of the ordinary Arnaukta. One other and important peculiarity of this grain is, that it is less affected by drought than any other varieties. At the same time it possesses several other features, its deep amber colour, and its earlier ripening. This important discovery was made by a peasant of the name of Bulatowsich, in the village of Troitzk, in the district of Bender, who being a close observer of nature, detected in his crops certain ears which were larger and became ripe more speedily than the rest of the crop. These he collected and sowed separately, and the result was an adundant harvest, and the introduction of a new and valuable variety of wheat. The event had created a great sensation amongst the agriculturists and dealers in grain, and the new wheat well merits being named after its discoverer.

Laudable.—The authorities of Oswego assume the duty of planting shade trees in the streets.—The street Commissioner advertises for "three or four thousand Elm and other suitable trees for border and street shrubbery," to be delivered the present spring.

Veterinary Department.

Choked Cattle.—*Remedy.*—Take any kind of tube, say an elder or quill, and fill it with gun-powder. Open the mouth, hold out the tongue, put the tube as far down as convenient, and blow the powder from the tube into the throat. It will relax the pipe and suffer the obstruction to pass on. Try it. D. S. Luffington. *Hinmanville, March*, 1849.

To Preserve a Horse from the Botts.—Take of bees wax, mutton tallow, and sugar, each 8 ounces, put it into one quart of warm milk, and beat it until it all melts and mixes; then put the whole into a bottle, and just before the wax, &c., begins to harden, give it to the horse. Two or three hours afterwards give him physic.

Another Method.—Give a horse occasionally a half pint of hard wood ashes, mixed in his grain and sprinkled, or given in his drink. This is an exellent remedy.

Another.—Give your horse salt freely—as that will, in nine cases out of ten, preserve him from the Botts. If he is attacked by them, give him a quart of warm fish brine; and if the case be a bad one, repeat the dose once an hour. For this purpose, save your fish brine.—*Farmer's Receipt Book.*

Cure for the Spavin.—Take one pound of angle worms, fry them well in a pound of butter, and after it is cool add one gill of spirits of turnentine. Take one ounce Origanum Oil, (sold at the druggists',) which mix in one gill of spirits of turpentine. Every morning, rub the spavin with the angle worm mixture, heated in a shovel over the fire. Every evening rub the spavin with the origanum oil mixture. By the time these are used you will begin to see the horse improve.

During the operation, it will often appear to make him worse; but this must not be regarded as injurious. It does not remove the lump, but the disease will be extirpated.—*Ib.*

Beware of Ring Bone.—If colts stand on a plank or any hard floor that is not well littered, they will be subject to the ring bone. When breeding horses, we left the floor of the colt's stable of the soil over which they were built. If this should be a deep loam, or of a clayey texture, then remove the soil about two feet deep, and replace it with sand, or the finest gravel to be obtained. Colts should always be let out to exercise in a yard, or open space, every day, during the winter, when not particularly stormy: and in this yard there should not be older horses, or any horned cattle which can do them injury. Being very playful they are more apt to provoke attacks upon them than other animals.—*American Agriculturist.*

Clipping Horses.—Observing a paragraph relative to clipping horses, I beg to state that I have lately been informed that the process injures the constitution of the horse in the long run, causing the animal to wear out sooner, notwithstanding every care may have been taken with him at the time of the operation and subsequently; although it is conceded that at the time of clipping, the horse is thereby enabled to perform his work more easily, and also thrives better.—*Agricultural Gazette.*

Horse Skates.—A writer in the National Intelligencer mentions the invention of Horse Skates, by means of which in cold latitudes, an ordinary horse has been often known to travel as far as 100 mils in three hours, without apparent fatigue. A full set, (he says) of these marvellous skates, bedecked in the Norwegian style, has been deposited in the patent office.

Spirit of the Agricultural Press.

Carrots.—As I have been a grower and consumer of roots for some few years (especially carrots,) I would, therefore, give what little information I can, all derived from experience. In the first place, I think there is no root ever yet introduced that will produce so great an amount of fattening properties per acre as the carrot. I believe there is no corn or hay, or oilcake or linseed, that will fatten any horse or bullock so soon and so completely as the carrot given in its raw state. Horses, however poor (if healthy), will get fat in a few weeks with carrots only. No hay, no water—in fact, they will not drink if you feed entirely on carrots. Now, as to quantity, if you wish only to fatten let them eat as many as they like; but one bushel per day, with hay, will keep your horses in good working order, without corn, and two bushels per day will fatten them while working without any hay or corn. There is no fear of griping them, as I believe the carrot quite free from any propensity that will produce that effect. I have two horses that are *wintering upon* carrots and hay. They have 40 lbs. of carrots weighed to them, and about 8 lbs. of hay, and they thrive wonderfully upon it. I am such an advocate for carrot cultivation that I should like to see every farmer with some acres every year. I think also it is the most profitable crop to grow for sale, for I believe it is quite possible to grow 50 tons to the acre. Several gentlemen have told me they have 30 tons to the acre this year. Perhaps we have not had so unpropitous a year for a long time, not only the quantity and quality of the carrot is great and good, but the mere cultivation is like subsoiling the land, and it is always kind for any grain after it. I generally grow the white Belgian and Altringham, but I think the short carrot called the "early horn" will grow the greatest weight per acre.

Richd. Webb, *in Mark Lane Express.*

We endorse the above views in full; and during the failure and uncertainty of the potato crop we advise that more atten be paid to the Carrot for milch cows, cattle and horses, and the Parsnip for feeding and fattening hogs.—Ed.

Salt as a Garden Manure.—I can strongly recommend a dressing of this manure (except on very stiff land.) To grow asparagus and seakale in perfection, it is essential, and I find a general improvement effected by its use in the bulk and quality of our culinary crops; it also distroys snails and other insects. For general crops, about ¾ lb. to the square yard will be sufficient; this should be sprinkled evenly over the ground when it is bare, and if dry, forked in immediately. To the crops of seakale and asparagus twice this quantity may be given; it should be spread over the beds in winter, or early spring, and either forked in at once or left to be dissolved by the rain.—*Agricultural Gazette.*

Agricultural Education in Cuba.—Three of the principal schools of Havana have instituted a new department in which instructions are given in Chemistry as applied to *Agronomia*, or cultivation of the various kinds of field crops.—*La Cronica.*

Patent Safety Bridle.—Mr. H. Seitz, of Marietta, Lancaster county, Pa., is the inventor of a very ingenious Bridle for which letters patent were recently granted, whereby it is impossible for the most spirited horse to kick or run away, and perfectly safe for a lady to drive or ride.—The principle on which it is constructed is to hold the horse by the application of a pulley around which the reins are made to pass at the side of the horse's mouth, which enables the rider to exert a great deal of lever power to control the mouth of the animal, and to check him at any moment.

Large Poultry.—At a show held in England, under the direction of the late Earl Spencer, the following were the dressed weights of some of the poultry exhibited: The best turkey weighed twenty lbs. 4 oz.; capon, 7 lbs. 14¼ oz.; pullet, 6lbs. 3¼ oz.; goose, 18 lbs. 2¼ oz.; couple of duck, 15 lbs. 10 oz.

How to Render Cloth, Silks, &c., Water Proof.—Take one pound, each, of common alum, (sulphate of alumius,) and sugar of lead, (acetate of lead,) and dissolve them in six quarts of boiling water well mixed by stirring. When cold, the top portion of the mixture should be poured off for use, as the sediment consists of sulphates of lead, potash, &c. Any article of dress, no matter how slight the fabric, if well saturated with this liquid, and allowed to dry slowly, will bear the action of boiling water, and not permit it to pass through it.

Editor's Table.

TO CORRESPONDENTS.—Communications have been received, since the publication of our March number, from Agricola, A. Bryant, H., Prof. C. Dewey, Myron Adams, T. C. Peters, H. L. Emery, S. W., Cephas, * †, L. Wetherell, D. S. Buffington, L. B. Manley, Alvin Wilcox, H. P. Norton, J. H. W., Jas. Weed, John Watson, E. Hildreth, M. L. Gallup, J. H. Wyckoff, Reed Burritt, J. R., Clinton Wood, W. H., *, Isaac W. Jones, H. W., A Physician, H. P. Buell, Farmer, A. H. Norris, J. D. C., Westfield, A. Wilson, Jacob Scott, and Subscriber.

OUR thanks are due to various old and new correspondents for valuable contributions. We must, however, beg our friends to have patience with us for a while. All of their favors shall be attended to as fast as we can find space, either by publication or such notices and remarks as shall seem most beneficial to our numerous readers. It is our aim to furnish matter that shall be as nearly adapted to the period when it will be practically useful as possible. All contributions that will *keep* over a publication or two, we are at present obliged to defer.

The illness of our Engraver has prevented us from giving a number of illustrations intended for this issue. Several plans of Houses, Cottages, and Agricultural Implements (from new contributors,) shall be given as soon as the engravings can be prepared.

SOWING CLOVER SEED.—(C. V. J., Clarkson, N. Y.) In answer to your inquiry we have no hesitation in advising you to sow your clover seed; and the first dry time in May or June sow on a half bushel of plaster to the acre, without fail—and if the elements are not extremely adverse we will endorse the result. We think, for the present and immediate use of the wheat crop to be benefitted by the green crop plowed under, that 8 or 10 inches is too great a depth of furrow—though, in a series of years, it will be found beneficial.

HENS EATING THEIR EGGS.—(T. R. S., Omar, N. Y.) We know of no other prventive for hens eating their eggs, than to keep them supplied with lime and gravel in some other shape, and not feeding them the shells, except very finely broken; and by making their nests in a box so deep and small that they cannot reach them while standing on the edge. Hens that are confined are much more apt to commit this fault, than those running at large.

(S. B. F., Livonia, N. Y.) Your article concerning a new and valuable stalk and straw cutter was crowded out last month, and is out of season for this number. As it will not spoil, we shall lay it over until the proper time.

PAGE'S PORTABLE MILLS.—We have received several letters of inquiry relative to Page's Portable Wind and Saw Mills, mentioned in our February number—but cannot furnish the information desired. We think Mr. P.'s post office address is Baltimore, Md., and presume that communications directed to him at that place will receive attention.

PREMIUM ARITHMETICAL QUESTIONS.—We have received a large number of letters concerning the questions proposed by Mr. CLARK in our February number. We will submit them to Mr. C. the first opportunity, and endeavor to publish his decision next month.

GENESEE SEED STORE AND AGRICULTURAL WAREHOUSE.—The proprietors of this establishment have a very large and superior assortment of Seeds and Implements for the spring and summer trade. Farmers and others visiting Rochester should call at their spacious and well filled rooms. Their assortment of plows, cultivators, &c., &c., is the most complete ever offered in this section of the country. See advertisement.

NEW BOOKS.—Among other works received too late for particular notice in this number, are the following: "The American Farm Book; by R. L. ALLEN," and "The American Bee-Keeper's Manual; by T. B. MINER." Published by C. M. SAXTON, 121 Front st., New York, and for sale by E. DARROW, corner of Main and St. Paul sts., Rochester. Price, $1 each.

DRAINING low lands will contribute to promote health and profit. Generally speaking, our wet and marshy lands are the richest in organic matters, and become the most profitable to the owner, when thoroughly drained.—*Buel.*

THE WOOL GROWER.—This is the attractive title of a new paper just started by our friend and correspondent, T. C. PETERS, Esq., of the Buffalo Wool Depot. The initial number is issued in good style, and well filled with valuable matter. In his introductory article, Mr. P. says:—"If I am sustained, it will be well for the farmers and wool growers; and that I shall be I have no manner of doubt. The paper will obtain and disseminate information to be found nowhere else; and it will be the organ of the wool-growing interest throughout the country." We commend the *Wool Grower* to our readers, and trust the editor will meet with the success his enterprise merits. Published monthly—16 pages octavo—at 50 cents per annum. Address as above.

DAGUERREOTYPES OF DEVON CATTLE.—We are indebted to WM. GARBUTT, Esq., of Wheatland, for Daguerreotypes of a pair of four year old Steers, and a two year old Heifer, (Devons,) owned by E. P. BECK, of Sheldon, Wyoming county. The animals represented received the first premium (in each class, as grass fed animals,) at the State Fair at Buffalo, in September last. The "counterfeit presentments" are quite natural and life like, and creditable to the artist—ALEX. MCDONALD, of Buffalo. The likenesses can be seen at our office.

Speaking of Devons—we never saw a more beautiful show of cattle, than was made by the owners of this breed at the Fair at Buffalo. We shall give an article upon the history and merits of Devon cattle, in our next.

THE NEXT FAIR of the N. Y. State Ag. Society, as we have heretofore stated, is to be held in Syracuse, on the 11th, 12th and 13th of September next. The amount of premiums offered is about *six thousand dollars*. Now is the time for the farmers of Western and Central New York to commence their preparations to add to the interest of the show, and *win the prizes*. We shall endeavor to publish the premium list, or a synopsis of it, in our next. It can be obtained in pamphlet form, we presume, by addressing the Secretary, B. P. JOHNSON, Esq., of Albany.

AGRICULTURAL SOCIETIES.—Notices, embracing lists of officers for current year, and premiums awarded at annual meetings of several County Ag. Societies, are necessarily deferred.

Secretaries of Agricultural and Horticultural Societies will oblige us by sending to the address of this journal, local newspapers containing proceedings of their annual and other important meetings.

FACTS FOR AGRICULTURISTS.—The exports of breadstuffs from the United States, Sept. 1 to Jan. 1, 1849, as compared with the same period ending Jan. 1, 1848, are as follows:

	Flour, bbls.	*Meal, bbls.*	*Wheat, bu.*	*Corn, bu.*
1848,	95,767	52,715	118,004	606,301
1849,	638,994	45,193	854,005	5,078,712
Increase,	544,227		735,911	4,465,412

WHEAT ON THE LAKES.—At Chicago, Michigan City, Little Fort, Southport, Racine, and Milwaukie, there are one million and thirty-eight thousand bushels of wheat in store, and vessels enough in ports on Lake Michigan to carry it all forward to market.

CHEAP LIGHTNING RODS.—No. 1 wire is said to be an ample protection against lightning, put up as the large rods are. War ships use the wire with complete success.

PLOWING BY STEAM.—A steam plow has been tried on a farm near Stratford, in England, by stationary engines at the extremities of the field, and the experiment is said to have been satisfactory. The engine is ten feet by six in bulk, portable with a pair of horses, and may be used for plowing, threshing, or for any purpose where power of the kind is required.

AMERICAN PRODIGALATY.—No observing American comes from the United States to Europe, without soon becoming convinced that economy of living is nowhere so little understood as in his own country; and that for nothing are the Americans more distinguished, than for a reckless waste of the means of subsistence. The refuse of many a family in the United States, even in moderate circumstances, would often support, in comfort, a poor family in Europe.—*Colman.*

READ the advertising department of this number. Observe the advertisement of Books—Mr. VAIL's Stock—Stallions—Agricultural Implements—Fruit and Ornamental Trees and Shrubs—and various other matters "too numerous to mention" in this place.

HORTICULTURAL DEPARTMENT.

EDITED BY P. BARRY.

PROGRESS OF HORTICULTURE IN EUROPE.

THAT the two months we spent among the Gardens and Green-houses of England, France and Belgium were pleasant ones to us, no one will doubt. Winter as it was, we found thousands of rare and beautiful things, the sight of which would repay us for a journey much more tedious and hazardous than the Atlantic, even in winter.

It is somewhat strange that amidst all the revolutions and political excitements—all the want and downright starvation—all the fluctuation in commercial affairs, that have for a few years kept European society in a ferment, bordering on and in many cases resulting in actual explosion—HORTICULTURE flourishes, and that beyond all precedent. At no period in the history of European civilization have horticultural pursuits attracted so much public attention. From the prince to the humblest peasant we find the garden the object of the greatest solicitude. Everywhere a new spirit seems to be awakened—public grounds are being enlarged and improved—collectors are sent at enormous expense to all unfrequented or unexplored parts of the world, exposing themselves to all manner of hardships and privations to bring to light whatever there may be new, curious or beautiful. Commercial Nursery establishments are extending and multiplying rapidly, and these too, are sending out, on their own account, their collectors to China and California, to South America and the Tropics, in search of new plants to enrich their collections. The prices at which new plants are sold is perfectly amazing: for instance, the elegant new Japan Cedar, *(Cryptomeria Japonica)* two to three feet high, cannot be bought at private sale for less than five guineas; five feet, and there are few of that size, ten guineas. So with the new and rare Pines and Firs from California, Mexico and India. Plants of many of them 1 to 2 feet in height cannot be bought for less than from 1 to 5 guineas. With Orchideous plants the same; 10, 20 and 50 guineas are common prices for these, and that too at public sale. The same is true of all other new and rare plants of whatever class or character.

The production of new flowers, by hybridization, such as Roses, Dahlias, Pæonies, Phloxes, Chrysanthums, Camelias, &c., is carried on in the same spirit. Efforts such as have never been previously attempted, are now being made by hundreds of scientific and practical men to reduce this most interesting department to a science, and to base it upon competent laws and regulations, and some ably conducted journals are solely devoted to its advancement.

In the culture of fruits there is no less interest. In all the English horticultural journals no topic at the present moment is more frequently discussed, or calls forth more experiment and investigation than the culture of fruits. The formation of fruit borders, manures, composition of the soil, exposure, pruning and training, are continually discussed with as much interest and animation as if they were entirely new subjects. So it is in respect to the construction and heating of houses, pits, &c., for the shelter and growth of plants, and for the protection and forcing of fruits and vegetables.

The quality of particular varieties of fruits is also attracting unusual attention. Gardeners who never before thought of inquiring whether their fruits were correctly named or not, or whether they had any names, are diligently comparing and testing, approving and rejecting. Nurserymen, particularly on the Continent, who have grown trees for sale for fifty years, without seeing their fruit, and who did not know by sight half a dozen varieties of the hundreds in their catalogue, are just planting specimen orchards to test them, and are beginning to read, compare and make notes and memorandums as to quality, growth, &c. I was astonished to find in some of the oldest Belgian and French nurseries specimen grounds neither so extensive nor so mature as our own, and in many just a beginning. Heretofore they have considered it their business just to *grow* the trees. In a celebrated Belgian horticultural establishment, where an immense fruit Catalogue is annually published, and the proprietor of which has been generally supposed a pomologist, we found not a single tree, nor does the proprietor know half a dozen fruits probably of all that are cultivated. Land we were told had just been purchased for a nursery, and some trees planted last autumn. And yet we have seen a nurserymen in this state take especial pains to advertise that his trees were procured from this source. All the trees ever sent by that establishment to this country were purchased from less noted and equally ill-informed growers. This purchasing of ignorant, irresponsible parties, did well enough in times past; but lately got him into great trouble, and has fairly compelled him to grow trees and study pomology.

The only men to be found, having a critical knowledge of fruits and fruit trees, such as every well-informed nurseryman in America already possesses, were the directors of the fruit department in the public gardens, such as the *London Horticultural Society's*, the *Jardin des Plants* at Paris, Rouen, Brussels, &c., and a few enthusiastic amateurs. The growers of trees did not aspire to be pomologists; and here is the great cause of the thousand and one blunders they have made, and have compelled their kind customers in America to make. But they have now woke up; and here I must say that the American trade has exercised a very beneficial influence upon them. Indeed, they have been compelled by their American customers to commence the investigation and correction of their numerous and long standing errors. Year after year they have been censuring them for mistakes and explaining their nature to them. Orders upon orders have been sent out for particular varieties, and these to be *positively correct*—in many cases the purchaser going into a a minute description of the fruit as well as the tree, in order to enable them to send the genuine article. This has naturally led to the course which we find now very generally adopted, of forming specimen grounds, and testing varieties as we do here. American nurserymen, therefore, may claim the credit of setting men, who are greatly their seniors in cultivation, right in this the most important branch of their business. In future, more reliance can be placed upon the correctness of what we receive from them.

In the culture and management of trees, and particularly garden trees, we have much to learn from the Continental gardeners. It is in Belgium and France we can study how to grow many trees in

a little garden, and how to grow them *well*—how to produce beautiful forms, and to hasten and maintain fruitfulness. In all the French and and Belgian gardens one is struck not only with the economy which prevails in filling every nook and corner, covering every wall or fence, with something for use or ornament; but the observer is also delighted with the appearance of propriety and fitness about every thing. You will not find an immense apple or pear tree, or a clump of old plum trees, or two or three great quince bushes covering nearly the entire garden; but you will find elegant pyramidal pear trees, or apples as pyranills on *doucain stocks*, or in bushes, on *paradise;* cherries either in pyramids or bushes, on *mahaleb* stocks; apricots, nectarines and peaches, in espaliers; plums, quinces and filberts, in pyramids; gooseberries, currants and grapes, when the gardens are small, trained on the walls. These trees are not only beautiful objects, but bear large crops of fine fruit, superior in size, flavor and beauty, as a general thing, to that produced on standards; and then the advantage of enjoying such a variety on a little spot, and of having trees at all times perfectly manageable —for these dwarf trees can be moved from one place to another, at any age. The gardens around Rouen, in France, were the best I saw any where in regard to fruit trees. As I passed the streets I noticed many little gardens that I wished I could take with me, and set down in Rochester, as a model. But the Rouen people have a thorough love of these things, and they have a capital teacher, in Professor DUBRIEL, director of the fruit department in the Botanic Garden. His trees are the best specimens I have any where seen, not only perfect pyramids—absolutely perfect—but they are covered with fruit buds, and in the most perfect health and vigor; so are his cherries and plums, filberts, &c. His espalier peaches, apricots, nectarines, gooseberries, &c., are all as perfect as any artist could draw on paper. Many of the French works on pruning give examples that had no existence but in the imagination; but Prof. DUBRIEL has created his illustrations, first in his garden and then on paper. The citizens of Rouen are admitted freely to see this elegant tree culture, and benefit by it. Mr. D. also gives lessons in pruning; his classes meeting at regular hours, each scholar with his pruning knife. He proceeds, and they follow, through the whole minutia of both the principles and practice. One day he takes apples, another pears, and then peaches, and so on through all the fruits, in all their forms. To these practical teachings he adds lectures, and these lectures and lessons on pruning and arboriculture are attended not by mere gardeners, but by large numbers of gentlemen of wealth desirous of being able to assist in the direction and management of their own gardens.

On the occasion of my visit on the 6th of January last, the pruning classes were about opening, and I met in the garden a Mr. BARD, a respectable merchant of the town, who had been a pupil, and so apt an one, that his own garden, though small, is one of the best managed in France, and that by his own hands at his leisure hours. I have never met an amateur so enthusiastic or so well skilled in the treatment of garden fruit trees. He had just contrived a new style of scale for giving the proper angle in the various modes of espalier training, and had come to show it to Mr. DUBRIEL.

Some ill-informed persons in this country since we commenced to direct attention to pyramidal and dwarf garden trees, have raised a cry against pears on qumce stocks, as being short lived; but I have seen trees 30 years old in the most perfect health and vigor, and all over the continent trees may be found 50 years old.

I shall have something to say at some other time of Mr. DUBRIEL'S method of culture.

TREE PLANTING.

WE need hardly urge upon planters the necessity of the utmost care in every particular. The ground should be thoroughly prepared. In all cases it should be, as we have often said, trenched or subsoil plowed, and properly enriched, so that the young roots may spread out freely on all sides, and find abundant nourishment. If people were half so zealous in the proper preparation of the ground, in the planting *well*, and in the after culture of trees, as they are in seeking for trees of *large size*, they would find their labors much more successful and profitable in the end. Many we have known to utterly refuse to plant a tree because it was not so tall that the "cows could not reach its branches." Such persons have much to learn about trees.

The well-informed, careful cultivator cares but little for size, if he gets a good, healthy, well-grown plant of the right sort. The purchaser of young trees has the advantage of shaping them to his own taste and convenience—and this is a consideration of some consequence.

The careful treatment of the ROOTS is another important point. They should neither be bruised, broken, nor exposed to the air until they get dried.

After being well planted they should be neatly tied to stakes, and have the surface of the ground around them cleaned and loosened every two or three weeks during the growing season. With such care, it is surprising how soon trees attain size and fruitfulness; and without this care, they had better never be planted.

By way of answering several correspondents in regard to distances, we subjoin the following table, which according to our experience is about right, in general.

SPECIES.	FORM.	STOCKS.	DISTANCES.
Apples,	Standard,	Common,	30 to 40 feet.
"	Pyramid,	Com'n or Doucain,	10 to 12 "
"	Dwarf,	Paradise,	6 "
Pears,	Standard,	Pear,	30 "
"	Pyramid.	"	12 "
"	"	Quince,	9 "
"	Dwarf,	"	6 "
Cherries,	Standard,	Mazzard,	20 "
"	Pyramid,	Mahaleb,	10 "
"	Dw'f bushes,	"	6 "
Plums,	Standard,	Plum,	18 "
"	Pyramid,	"	9 "
Peaches,	Standard,	Peach,	18 "
"	Pyramid,	Plum,	9 "
Apricots,	Standard,	Peach or Plum.	18 "
"	Dwarf,	Plum,	10 "
Nectarines	"	"	10 "
Quinces,	Standard,		12 "
"	Pyramid,		9 "
Currants, - - - - - - - -			4 feet.
Gooseberries, - - - - - - - -			4 "
Raspberries, - - - - - - - -			3 "

THE *Prince Albert* is considered the best early variety of peas; next to this, the *Early Washington*. They may be planted as soon as the ground is settled.

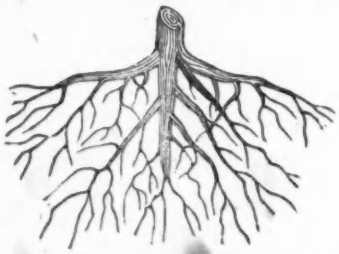
BOTANY.—THE ROOT.

THE ROOT consitutes the basis of the plant: it serves two purposes in the vegetable economy—first to fix the plant mechanically in the soil and retain it in its position—secondly to absorb from the soil those inorganic elements which are necessary for its food. The general direction of the root is downwards; but the roots of various plants grow at all angles from the horizontal to the perpendicular: the principal perpedicular axis is called the *tap root*. The number and extent of the roots must correspond with those of the stalk and leaves of the plants, in order to supply their demand of food from the soil.

Roots do not usually extend to great depths, but keep within the limit of that portion of soil which supplies their proper nutriment. Roots are distinguished from stems and branches by the absence of stomata, buds and pith—and by the presence of absorbing fibres.

The stock, or main body of the root, sends off the *fibrils*, or minute, slender branches of the root,—the delicate, tender extremities of the fibrils are called *spongioles;* these are the growing points, and the organs which absorb from the soil the earthy part of the food of all plants. If some trees, as the willow or currant, be inverted in the soil, the branches are changed to roots, while the roots put forth leaves in the air, and the plant grows.

Roots are of several different forms, which have received specific names for the sake of convenience.

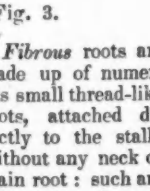


Ramose, or *branching* roots are those which send off many ramifications in various directions, like the branches of a tree: such are the roots of the oak, &c.

FIG. 2.

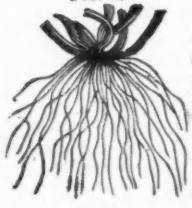
Fusiform, or *spindle shaped* roots, consist of a fleshy stock, tapering downwards to its extremity, sending off fibrils, which are its true roots: such are the radish, carrot and parsnep. Fig. 2.

FIG. 3.



The *napiform* root is a variety of the fusiform, in which the neck or upper part swells out, so that its diameter equals or exceeds its length. The turnip and turnip-radish are examples. Fig. 3.

FIG. 4.



Fibrous roots are made up of numerous small thread-like roots, attached directly to the stalk, without any neck or main root: such are the roots of most grasses. Fig. 4.

Fasciculated roots differ from the fibrous in having some of their fibres thickened and fleshy, as in the dahlia and pæony.

FIG. 5.

Tuberous roots consist of fleshy, roundish knobs or tumors, at or near the extremity of the stalk, as in the orchis: "the potato was once classed among tubers,—but as it uniformly bears buds, it is classed among stems." Fig. 5.

Granulated roots consist of many small rounded bulbs connected by fibres, as in the common wood sorrel. Fig. 6.

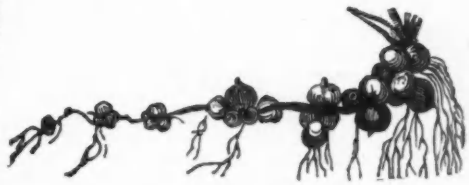


FIG. 6.

Besides these varieties of roots, there are several others which are peculiar; and distinguished by not being necessarily fixed in the soil.

Aerial roots are those which grow from some part of the plant above the surface of the soil in the open air. Some creeping plants, as the ground ivy, send forth these roots from their joints. The screw-pine also send off roots which are several feet in length before they reach the ground. Such roots are often seen in the common maize.

Floating roots belong to plants which float upon the surface of water. The water-starwort is said to float upon the surface until flowering, when it sinks and takes root in the mud till its seeds ripen.

The *epiphytes*, or plants fixed upon the branches of other species, derive their nourishment mostly from the air; such are some species of moss.

Parasites are those plants which grow upon other plants; and some of whose roots are said to penetrate their tissues and subsist upon their juices; while the roots of others are aerial, and derive their food from the air: such are the mistletoe and dodder.

Roots are divided again into three varieties, viz: annual, biennial and perennial, according to their duration.

Annual roots are those which live only one year, and must be raised from the seed, sown every spring,—as beans, peas and cucumbers.

Biennial roots are those which live two years and do not blossom the first season,—but they produce flowers, fruit and seeds the second year, and then die; such are the beet, cabbage and carrot.

Perennial roots live several years,—some of them, as forest trees, live to a very great age: the grasses, dandelion and asparagus are other examples.—*Rodgers' Scientific Agriculture.*

POMOLOGICAL REFORM.—A. J. DOWNING, Esq., chairman of the General Fruit Committee of the Congress of Fruit Growers, has addressed a circular to the committee, directing their attention to the necessary subjects for investigation. It is an important document, and we shall call attention more particularly to it at a future time.

HINTS FOR APRIL.

PRUNING should all have been done last month, but if any has been deferred it should be attended to forthwith. In orchard fruit trees little is necessary beyond thinning out the small branches to admit air and light freely to all parts of the tree, and removing all straggling branches or those that cross each other; spoiling the form and balance of the head. It is too late for grapes, or stone fruits, unless it be small limbs or twigs; if pruning be necessary defer it till summer.

Spade around and give a top-dressing of manure to all fruit trees, if not done last fall. Use well rotted manure; some decayed leaves from the woods, and a portion of ashes and lime mixed with the manure makes a good compost for any trees, particularly for peaches.

GRAFTING must be done, commencing with cherries and plums, and finishing with pears and apples. The grafts of last season should be looked over and all shoots that have appeared below them cut away, and weak shoots cut back to a good plump eye. *Suckers* that appear around the roots of trees, and all shoots on the trunks of standards should be carefully removed.

TRANSPLANTING should be finished as early as possible. Some people cannot think of going into their garden to see what trees should be planted in it, or what care it needs until the ground is dry and clean, the sun warm and bright, and the leaves and blossoms begin to appear—then gardening becomes so charming that it can be no longer resisted — something must be done; and then it is so late that a great many important little things must be deferred. Don't be afraid of a little blustery weather; but get every thing done in season, fair or foul, and when fine weather comes, your trees and plants, your grass lawns, your seeds, &c., will have but to grow.

Roses should have a careful pruning and a liberal dressing of good old manure. The rose cannot have a soil too rich, and in a poor soil, or one half way poor, you cannot expect a fine, first rate bloom. Many people will buy a good rose, and plant it in a miserable worn out border. It grows *perhaps* a very little, and produces a small starved blossom. It has neither the size, color or fragrance that was expected, and then the poor nurserymen are blamed for over-praising it. Well, sometimes they are too lavish of their commendations, but cultivators are much more frequently at fault in their treatment. All roses should have a deep, rich and if possible a somewhat heavy soil. *Climbing Roses* should be cut back a little; that is, remove the small weak ends of the last season's shoots, and they will push more vigorously afterwards. All straggling, superfluous shoots should be cut out entirely.

The Everblooming Roses that may have been protected in the borders should be uncovered, if not done, and properly pruned and dressed. Those wintered in cold frames may be turned out at any moment; cut them back freely to obtain strong growth.

Flowering Shrubs should be pruned, too, if the heads have become dense: this, with a dressing of manure is necessary to luxuriant foliage and a profusion of blossoms.

Herbaceous Perennial Plants, if old and large, will not bloom well. The roots cannot find nourishment, and they will fairly wither away in midsummer. They ought to be divided—(it ought to have been done last fall)—and re-planted in fresh good soil.

Annuals may be sown in well prepared borders towards the end of the month, when the ground is dry and warm. If planted too soon they will rot. If an old hot-bed could be had with a trifling heat, they might be forwarded in it and a month of time be gained.

Lawns, Walks, Hedges, &c., will all require attention at this time.

Those who wish to live well will not forget the KITCHEN GARDEN. No doubt most people have *Peas* now nearly in blossom, and *Lettuce* fit for table. These are things that can be started early in any sheltered corner. A little frost don't harm them. The general crops may now be put in, such as *Potatoes, Beets. Carrots, Onions, Cabbage, Cauliflower, &c.* Beds of *Sea Kale, Asparagus* and *Rhubarb*, three culinary plants that are really indispensable to all good gardens, may be made now, and old beds dressed and enriched.

There are a multitude of other matters to be done that cannot escape the attention of careful persons;—what we have given are, of course, but mere HINTS.

THE NORTH AMERICAN POMOLOGICAL CONVENTION has appointed State Committees, and issued a plan of operations similar to that of the Congress of Fruit Growers. This body will meet with the New York State Agricultural Society at Syracuse, next fall. We apprehend that pomological science will not be greatly benefitted by two such bodies in the same field. Looking only to the general good, we conceive that it would be better for the friends of this matter to unite their labor and efforts and influence in one organization. There cannot be two such bodies without more or less rivalry being engendered; and if rivalry is at all admitted, we cannot reasonably expect good. This view of the subject, we think, will ultimately prevail.

THE BAILEY SWEET APPLE,

BY C. P. BAILEY.

DEAR SIR:—I owe you an apology for having so long neglected your inquiry in regard to the apple called the "Bailey Sweet." I have often, in its early history, conversed with the first settlers of this place, in regard to the origin of this apple; but could only ascertain that the orchard, containing some twenty trees of this fruit, was transplanted in 1814 or 15, and came into my possession in 1829, at which time I commenced distributing the scions liberally throughout the country. From this circumstance, it no doubt received its name. I have learned its history, wherever introduced, and can trace it no farther back than this orchard.

The tree is of vigorous growth, bears abundantly; the fruit ripens early, and deep red on the outside—size, large—shape, oblong, tapering handsomely towards its summit. Its flesh tender, juicy, sweet and excellent. A superior table fruit, fine for baking or cooking, and decidedly the most popular apple in this vicinity, and so considered wherever it has been introduced, as far as I can learn, both east and west. With proper care will keep into the month of February.—*Perry, N. Y., February*, 1849.

VARIETY OF APPLES—CHAPIN'S ORCHARD,

There probably has not been an instance of the production of as fine varieties of apples as are now grown and originated on the farm of the late Heman Chapin. The "Early Joe" ripe in August and September; Water Melon, or "Norton's Melon," November to February, and the "Northern Spy" from March to 15th of June—a complete succession of apples, the two first, particularly a desert fruit, and the "Spy" answering for both table and cooking. Western New York can boast of the three, and they cannot be too highly prized. Let every one be advised to cultivate them, and when they succeed, they will thank the writer of this for his advice.—J. H. WATTS. *Rochester, N. Y., March,*, 1849.

PLANTING TREES ON CLAYEY GROUND.

BY A. BRYANT.

Mr. Editor:—I notice in the Horticulturist of February a communication from Mr. J. Fulton, Jr., a nurseryman in Chester Co., Pa., detailing his method of preparing ground for and planting an orchard which seems to me to be calculated to mislead the inexperienced, who may be induced to practice after his example.

His preliminaries are excellent, except "digging the holes;" the most critical and importont of all. In this I think he is entirely wrong, and that before he becomes the profitable proprietor of an orchard thus planted, he must be his own customer for a second lot of his fine two-year-olds. The work commences by "digging the holes from 4 to 5 feet square and 2 deep, throwing the clay subsoil entirely away." Now, allowing there to be eight inches of good surface soil, it follows that he must remove sixteen inches of solid clay, forming a basin large enough to hold three barrels of water, and almost as capable of retaining that element as any vessel that a potter could produce. And over this reservoir, after filling in with rich compost, he proposes to place his young trees—which I think is a great mistake.

How tenacious the clay may be on his place, I do not know, but in ordinary clayey-subsoil I am sure they would realize the presence of "water-cure" at least until midsummer, and if they did not die out the first or second year after planting, but should survive such ultra hydropathic treatment, their stinted groth and annual crop of moss, for the first ten or twelve years of their youth, would evidence to the planter that he was sadly mistaken in the premises, or that his trees were endued with sense enough to rebel against their destiny.

I have known many trees to be destroyed by pursuing the above method. The water should never be permitted to lodge under the roots of a tree. Where the subsoil is a heavy clay, the ground should be worked quite two furrows deep, and thrown into ridges by frequent plowings to the center, until the depth of two feet of good soil is obtained, when the trees should be set at the desired distance, on the middle or highest part of the ridge.

Staking and mulching are indispensable in this case, as the evaporation is greater and the tree more likely to be rocked by the winds from its position, than when the subsoil is soft and presents no obstruction to the downward direction of the roots. Frequent wetting of the stem and branches during the first summer after planting, especially if the season be dry, will be found far more beneficial than watering at the roots, a practice I am satisfied that kills more trees than it saves. It is proper to observe that wetting should always be performed toward evening, and never at any other time. *Erie County Nursery, Buffalo, N. Y., February*, 1849.

With Mr. Bryant we deprecate the practice of digging deep holes for trees in a damp, clayey soil. Far better keep the roots near the surface, within the reach of heat and air, and good wholesome food. —Ed.

The Beet Root was first brought from the shores of the Tagus, and was cultivated in gardens, on account of its elegant leaves and the rich red color of its roots, two hundred years before it found a place on our tables as an esculent luxury.

ANSWERS TO CORRESPONDENTS.

DWARF APPLE TREES.

M. L. Burrall, *Lockport*. A standard apple tree requires to be planted at least thirty feet apart; dwarf bushes on Paradise stocks, about five or six—so that you may have a very interesting collection in the place of one tree. And these dwarf trees when seven or eight years old, will bear, if properly managed, from half a bushel to two bushels of fruit according to the nature of the variety—they bear very early, say the second or third year from the bud or graft, but, of course, the quantity is small at first. The French grow very nice pyramidal trees on the *doucain* stock, a species that holds an intermediate rank between the Paradise and the crab or common stock. These pyramids would perhaps suit your purpose best, if you could get them; they may be planted ten feet apart.

But the production of large quantities of apples should not be aimed at in a garden, because it is an impossibility. We do not hesitate to say that much more pleasure and profit will result from the bushes or pyramids than from the standards. In the grounds of Mr. Rivers, of Sawbridgeworth, we saw a little plantation of 360 dwarf apple trees on paradise, on about ten square rods of ground. For your benefit and others, we give, in another place, a table of distances.

CERASUS MAHALEB.

A. Thompson, *Otisco*. This is what is called the perfumed cherry on account of the leaves, wood and blossoms having a strong perfume. It is a native of the south of Europe. It is a branching tree with smooth, glossy, light green foliage, and attains the height of 20 or 25 feet. It bears small, roundish, black, bitter fruit, and is remarkable for flourishing on the poorest soil. It is cultivated in British gardens as an ornamental tree, but extensively used by the French for dwarfing the cherry tree. The first year or two the free growing sorts make as strong growth in it as on free stock, but afterwards they shoot less vigorously and become very prolific. It is raised principally from seeds as the mazzard, and may be worked the second year. The price of stock fit for working is about $5 per 100 in the nurseries here, being mostly imported. The price of Paradise stock is, we believe, about the same.

The Cottage Garden of America, containing practical directions for the Cultivation of Flowers, Fruits and Vegetables: by Walter Elder. Philadelphia, Moss & Brother.

The above is a neat work of about 250 pages, with which we have been favored by the publishers. The author claims that he has taken untrodden ground; that other works on the subject of gardening have been designed for the rich, while his book is "addressed entirely to the cottagers of America."

Mr. Elder is an experienced gardener, making no pretension to literary acquirements, being more accustomed, in his own language, "to the spade than the pen; and better at laying out gardens than making books." This work, however, is the fruit of long practice and close observation; and although the best gardeners differ somewhat in their practice, the author declares that "every article in the book will stand the scrutiny of practice." It contains a large amount of matter in a small compass, and will be a valuable book for the "cottagers of America."

Premiums for Seedling Grapes.—Mr. Longworth, of Cincinnati, has lately offered premiums of $50 each for a seedling Catawba, Ohio, Herbemont or Missouri grape, equal to the original, and of a white, blue or black color. It is not considered a difficult matter to obtain seedlings of the proposed colors. White seedling Catawbas have been already grown in the vicinity of Cincinnati.

Cuttings and grafts, when sent to a long distance, should be enveloped in pieces of oil cloth. This preserves them from the action of the air.

CULTIVATION OF LIMA BEANS.

Mr. EDITOR:—I hand you for publication in the Horticultural Department of your paper, a communication from one of our citizens in relation to the cultivation of Lima Beans, presented to the *Horticultural Society of the Valley of the Genesee.* Should the experiments of others prove as successful as have those of Mr. SEWARD, we may hope soon to see our market well supplied with this most excellent and valuable table vegetable. L. A. WARD.

BY the request of the President of your Society, I submit the following details of my experience in cultivating this plant for some time past. It is now about eight years since my attention was called to the article by Mr. BATEHAM, at that time of the Rochester Seed Store. I purchased a single handful for a shilling, and have succeeded in perfecting a sufficient quantity for use and for seed since that time, not exceeding fifteen or twenty hills in a season. In the mean time, having had an opportunity for observing the peculiar habits and necessities of the plant, I prepared last spring a strip of ground equal to two square rods, on which were planted about sixty hills, with four seeds to a hill, which *averaged*, after the common catastrophies of germinating, and the depredations of the cut-worm, two and a half matured plants to the hill. They grew as usual in the months of July and August with great vigor, some of the vines attaining a length of more than twenty feet. The bean was sufficiently matured for cooking about the 15th or 20th of August, and from that time to the last of October they were gathered freely for the use of a small family. A half peck was submitted at the exhibition of your Society about the 20th of September, to which was awarded a premium of two dollars.

Mr. FOGG, of the Seed Store, desiring to obtain for seed what might mature at the rate of seven dollars the bushel, I had them carefully gathered about the 10th of November, amounting to a full half bushel of plump dry seed, in addition to which there was nearly a peck of dry beans not considered sufficiently ripe for seed, which we find to be as great a luxury for the table in winter as they were in the fall. Under all these circumstances, the crop cannot be considered less than one bushel, at $7. (It is said, by the way, that the article is considered in the Philadelphia market as good as lawful tender for $10 the bushel.) One acre of ground at this rate would produce eighty bushels, and at $7 a bushel, $560 —enough one would think to satisfy the rapacity of a California gold digger. The inferences to be deduced from the foregoing statements are, first, that there is no good reason why our vegetable market should not be as well supplied with this *real luxury* as are the markets of New York and Philadelphia; and second, that they can be produced for market, in quantities and at prices that would place them in reach of all our citizens.

The Lima Bean, as its name indicates, is a native of Lima, in South America, introduced into the United States probably within the last thirty years. It is consequently a little out of its latitude in Rochester. It will be necessary, therefore, to secure the greatest success in cultivating it, that you select a warm, sandy rich soil, if possible a little elevated from the plain, as such elevations will often escape a frost in spring which would destroy the plant a hundred yards distant on a plain ten feet below, and it will be apt to be too late to plant this bean a second time. The same will be true of the frost in the fall, when every day will be needed to perfect the crop. They should be planted between the 1st and 15th of May, immediately after a warm rain, so as to get them up if possible before it rains again—a few cold wet days, or a hard crust on the surface, may dvstroy a large part of your plants after they have sprouted and before they are up. The vines, after they commence running, will need a little assistance in attaching themselves to the poles; the cultivation after this need not vary from that of other beans. The roots may be pulled up in the fall or cut off near the ground, and the beans left to dry on the poles.

To those who are entirely unacquainted with this vegetable it may be proper to state, that the Lima Bean is to all other beans what the Marrowfat Pea is to the common Field Pea. It is a large white bean, growing three in a capsule or pod, rich and buttery, having the starchy or beany taste peculiar to the family scarcely perceptible. J. W. S.

A WORD ABOUT PEARS.

BY H. P. NORTON.

IN the spring of 1846 I gave a neighbor scions of the Bartlett: which he inserted on bearing trees, and in September, 1848 delivered me a specimen of large and excellent fruit gathered from those scions.

In August, 1847, I budded several varieties upon stocks of the apple or orange quince. This day I have measured the growth, and thinking the results may be interesting and perhaps useful, furnish them:

	HEIGHT.	DIAMETER AT BASE.
Bartlett,	4 feet 9 inches,	½ inch.
Beurre d' Aremberg,	4 " 2 "	½ "
Summer Bon Chretin,	5 "	½ "
Jargonelle,	4 " 8 "	½ "
Rousselet de Rheims,	2 " 9 "	½ "
White Doyenne,	2 " 4 "	½ "
Gray Doyenne,	2 " 1 "	½ "

Golden Beurre. of Bilboa, grafted April, 1844, shows the following height of main stem, 2 feet 10 inches; 6 side shoots, 21. 11, 9, 9, 8, 4 inches, making, making the entire growth 8 feet. Diameter ¾ inch.

I am surprised that Beurre Diel on quince is not more frequently and more highly recommended by cultivator's of fruit and conductors of pomological publications. The rapid advance, hardiness, productiveness of the tree, and the large size and excellence of the fruit render this, in my poor opinion, a desirable variety. Indeed, I do not know its superior.

You will have observed that Mr. DOWNING has recently in the Horticulturist, uttered strong animadversions upon the practice of giving long and deceptive lists of pears in Nurserymen's Catalogues, and affirms there are not over twenty varieties really worthy of cultivation. If this be true, a very obvious inquiry suggested is, Why has he in his Fruits and Fruit Trees described 233 varieties? If not worth cultivating, why fill the book with their description? The book was designed to be, and has become a standard work, for the information and guidance of those who desire to grow good fruit At least 80 to 100 of these varieties are expressly pronounced to be "first rate," "excellent," "delicious," "worthy of cultivation," &c., so that no reader can doubt the author intended to recommend them as desirable, and entitled to a place in fruit gardens. If those who raise trees to sell are censurable for putting before the public extended lists with an indiscriminate recommendation of the varieties, is not the writer of a standard work justly obnoxious to severe rebuke for misleading the uninitiated in a similar manner? In the one case purchasers are likely to suspect the representations and are on their guard; in the other, discovering no motive for over-wrought descriptions, they are more liable to be injured. *Brockport, March*, 1849.

The idea of reducing the list of pears to about a dozen of the best varieties is rather utopian, while so many tastes exist and so many climates and localities to be suited. Nurserymen are compelled to grow a great variety, but people are by no means compelled to buy them.—ED.

Ladies' Department.

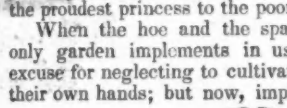
GARDENING FOR LADIES.

Mr. Downing, in the February number of the Horticulturist, when urging the ladies to decorate their homes with climbers and creepers—the drapery of nature, more beautiful far than festoons of satin and gold—says: "All that is most graceful and charming in this way owes its existence to female hands. * * * They are naturally mistresses of the art of embellishment. Men are so stupid in the main about these matters, that if the majority of them had their own way there would neither be a ringlet nor a ruffle, a wreath nor a nosegay left in the world."

Without entirely assenting to the truth of the above, we would say that the ladies have ever been considered, the world over, the almost exclusive patrons of flowers. And we know of no employment—no exercise or recreation—so conducive to health and happiness—none that will bring so effectually the glow of health to the cheek, and of joy to the heart, as Gardening. It not only furnishes exercise, but exercise in the open air, and that regularly. While riding and other modes of exercise are attended with expense, and inconvenience, and loss of time, and are seldom attended to regularly, even by those most favored: yet she who cultivates a flower garden, and loves flowers, will seldom neglect her daily task. The ever encroaching weeds, the necessities of her plants, call daily for her attentions—and seldom calls in vain.

The healthy appearance of English ladies is noticed by all American travellers. And for this they are in a great measure indebted to their passion for gardening. All English ladies work in their flower gardens, from the proudest princess to the poorest cottager.

When the hoe and the spade were almost the only garden implements in use, ladies had some excuse for neglecting to cultivate their gardens with their own hands; but now, implements are made so light and convenient, especially for ladies' use, that there would seem to be no excuse. The *Ladies' Garden Fork* is one of the most useful of these, either in the garden, or among plants in pots. The *Transplanting Trowel* is a light and convenient implement for preparing the ground for small plants, and for removing them to the desired place, without disturbing their roots or checking their growth. We see advertised in the eastern papers *Ladies' Gardening Gloves;* but we would not advise our fair readers to be particular about the *mittens.*



The architect may design, and the builder erect, the stately mansion or the simple cottage; it may be faultless both in design and execution, yet it stands stiff, unmeaning and lonesome;—but let some fair hand surround it with the drapery of nature—leaf and blossom—and it is changed as if by magic; its deformities, if any, are hid, its beauties heightened, and it becomes at once the abode of grace and beauty.

Soda Coffee.—The flavor of coffee may be very much improved by adding forty or fifty grains of carbonate of soda to each pound of roasted coffee. In addition to improving the flavor, it neutralizes the acid contained in the infusion.

Boys' Department.

Boys Look at This.—*The Orphan's Gratitude.*—Hon. A. H. Stevens, of Georgia, in a recent address at a meeting in Alexandria, for the benefit of the Orphan Asylum and Free School of that city, related the following anecdote:

"A poor little boy in a cold night in June, with no home or roof to shelter his head, no paternal or mateal guardian or guide to protect or direct him on his way, reached at nightfall the house of a rich planter, who took him in, fed, lodged and sent him on his way, with his blessing. Those kind attentions cheered his heart and inspired him with fresh courage to battle with the obstacles of life. Years rolled round, Providence led him on, he had reached the legal profession; his host had died; the cormorants that prey on the substance of man had formed a conspiracy to get from the widow her estates. She sent for the nearest counsel to commit her cause to him and that counsel proved to be the orphan boy years before welcomed and entertained by her deceased husband. The stimulus of a warm and tenacious gratitude was now added to the ordinary motive connected with the profession. He undertook her cause with a will not easy to be resisted, he gained it; the widow's estates were secured to her in perpetuity; and Mr. Stephen's added, with an emphasis of emotion that sent its electric thrill throughout the house, "that orphan boy stands before you!"

Arithmetical.—*For the Boys.*—To find the square of any number, or series of numbers, having the square of any other number given.

Rule 1.—To the square of the number, (the given square,) add twice the number increased by *one*, and the sum will be the square of the next greater number: thus, $12^2=144$; and $144\ddagger12\ddagger2\ddagger1$. $(=25,)=169$, the square of 13; &c.

2.—From the square of any numbers, subtract twice the number diminished by one, and the remainder will be the square of the next less number; thus, $12^2=144$, and $144-12\ddagger2-1$, $(=23,)=121$, the square of 11; &c.

Why? Boys.—H. *Down East, Feb.*, 1849.

Enthusiasm.—Nothing is so contagious as enthusiasm; it is the real allegory of the tale of Orpheus; it moves stones—it charms brutes. Enthusiasm is the genius of sincerity, and truth accomplishes few victories without it.

Early Poverty a Blessing.—An English judge being asked what contributed most to his success at the bar, replied, "Some succeed by great talent, some by a miracle, but the majority by commencing without a shilling."

The three most difficult things are, to keep a secret, to forget an injury, and to make good use of one's leisure.

Dr. Franklin, in speaking of education, says, "If a man empties his purse into his head, no one can take it from him."

OUR PRESIDENTS.

First stands the lofty Washington:
That noble great immortal one;
The elder Adams next we see,
And Jefferson comes number three;
Then Madison is fourth you know,
The fifth one on the list Monroe;
The sixth an Adams comes again,
And Jackson seventh in the train;
And Harrison counts number nine;
The tenth is Tyler in his turn,
And Polk eleventh, as we learn;
The twelfth is Taylor, people say;
The next we'll learn some future day.

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Market Prices of Agricultural Products.

New York, March 22—7 P. M.

FLOUR—Flour rather heavy. Sales 3,000 bbls. at 5.37 *a* 5.60, with an occasional sale at something off.

GRAIN—Yellow Corn firm, but white heavy. Sales 25,000 bu. at 52 for white, 59 *a* 60 for northern yellow. Rye 60½. Oats 37 *a* 39. Barley 62.

PROVISIONS—Pork has a speculative tendency. Sales at 9 *a* 9 12 and 11 *a* 11.12. At the close 9.25 and 11.25 was asked. Beef firm. Lard 6 *a* 6½ N. Orleans, 6¾ *a* 6¾ for prime. Sales 1000 kegs. Butter and cheese without change.

SEED—Clover 6 *a* 6¾ for old and new.

ASHES—Are $6.75 for Pots, $7 for Pearls.

Rochester, March 23. 1849.

In consequence of the bad state of the roads, but little produce has been offered in market during the past ten days

FLOUR AND GRAIN.—Flour is selling at $5—some holders ask $5.12. Wheat $1.13 *a* $1.16 per bushel. Corn 46 *a* 47 cents. Rye 53 cents. Barley 50 cents. Oats 30 cts.

SEEDS—Clover $3.50 *a* 4—retail, $3 75 for medium, and $5 for large kind. Timothy $2 *a* 3. Flax $1.

PROVISIONS.—Pork (Mess) $13 *a* $14 pr. bbl. Beef $5 per cwt. —mess $7 *a* $8 per barrel. Butter 12 *a* 14 cents. Eggs 13 cts. Cheese 6 *a* 6½. Lard (tried) 7½ *a* 8. Maple Sugar 10 cts.

Buffalo, March 22.

There is more disposition on the part of the holders to sell than for some time back. In Flour good brands are generally held at 4.62½ Mess pork sells at $13; prime $9 50.

To Agents, Post-Masters and Subscribers.

AGENTS, Post-masters and other friends of the Farmer will bear in mind that we offer Premiums amounting to OVER TWO HUNDRED DOLLARS (in Agricultural Books, Implements, &c. at cash prices,) for subscribers obtained before the 20th of April next. We have not room to publish the list of Premiums in this number, but will send it, together with show bill, specimens, &c., to all who wish to compete.

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A MONTHLY JOURNAL OF

AGRICULTURE AND HORTICULTURE,

ILLUSTRATED WITH ENGRAVINGS OF

Farm Buildings, Domestic Animals, Implements, Fruits, &c.

THE TENTH VOLUME of this Journal will commence on the 1st of January, 1849. In making this announcement to his AGENTS and the FARMERS and FRUIT CULTURISTS of the country, and again asking their support in behalf of the work, the Publisher has the satisfaction of stating that the GENESEE FARMER now has a circulation EXCEEDING, BY SEVERAL THOUSAND, that of any similar periodical published in America. This fact, alone, furnishes abundant evidence of the *real value* and *superior merit* of the work—for no journal, however cheap, can become and continue so universally popular, unless actually WORTHY of the substantial support of an intelligent community.

THE HIGH REPUTATION which the Farmer has acquired throughout the United States *will be maintained*, and if possible *augmented*, during the ensuing year. To accomplish this object, no effort or expense will be spared by the Editors or the Publisher. Their aim is to furnish a *reliable* and *independent* journal—one which shall avoid and condemn *humbug* in whatever guise it may appear, and impart correct practical and scientific information on all subjects pertaining to Agriculture and Horticulture.

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